HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

September, 1934 · 25 Cents

Selecting a College

The Stuttering Child

The School and the Home: A Partnership

What One Food Manufacturer Thinks About The Committee On Foods' Work

Three Years of Close Contact Highly Beneficial to General Mills, Inc.
According to Samuel C. Gale, Director of Advertising, General Mills, Inc.

IN JULY 1931, EMBO, a specially prepared, purified wheat embryo product, was accepted by the Committee on Foods of the American Medical Association. In rapid succession thereafter, the principal products of General Mills, Inc., were submitted to and accepted by that Committee, among them GOLD MEDAL "*Kitchen-tested*" Flour, WHEATIES, BISQUICK and SOFTASILK.

In addition to the advertising of these products, other general advertising of this company in the interests of breadstuffs has been discussed with and submitted to this Committee for their consideration and acceptance.

In the course of these three years many members of our organization, and the writer in particular, have had very close contact with the Committee. We can unhesitatingly say that this contact has been both helpful and constructive.

We have been particularly happy to note the recognition which the Committee has given to the necessity of effectively presenting the true merits of any product to the public in order to substantiate the advertising and sale of that product. Because the Committee's work is undertaken in the public's interest, many people are inclined to believe that the submission of a product and its advertising to the Committee would necessitate the elimination of the most effective sales presentation of the product's merits. We have not found this to be the case.

On the contrary, while the Committee has assisted us in keeping our copy writers within the bounds of truth and propriety in the claims made, the fact that all of our claims have passed the Committee's scrutiny has, in our opinion, lent additional force of true conviction in their presentation to the public. We feel that the work that the Committee on Foods of the American Medical Association is undertaking is not only of benefit to the public, but is of benefit to co-operating food manufacturers as well.

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TABLE OF CONTENTS

Cover Design
Andrew Benson PAGE

Ready for School Again 776

If I Were Selecting a College 778
Calvin T. Ryan

Your Child's Sleep 781
Glenville Giddings

Food Poisoning 784
Robert A. Kilduffe

Health Pursuits in Pictures 788; 800; 807

Helping the Stuttering Child 790
Wendell Johnson

The School and the Home: A Partnership 794
Margaret Beard Gilpin

Fiddle or Fiddle Stick 796
J. F. Rogers

Dental Dens. Part I 801
Robert H. Brotman

The School and Tuberculosis 804
William Paul Brown

Waging War on "Polio" 808
Stella Randolph

Teaching Your Child to Be Safe 810
Curtis Billings

Common Sense in Mouth Care. I, II and III 813
W. M. Gardner

Going to School 817
Elsie M. Fowler

Sufficient unto the Day 818
Fae Decker Dix

The Ann J. Kellogg School 821
W. G. Coburn

A Piece of Butterscotch Pie 824
Evelyn Blanchard

Our Parasites. IV. The Itch Mite 826
Claude Lillingston

The Eye Book. III. The Function of Sight 829
Hyman Cohen

A Housewife Looks at the Committee on Foods. XII. Committee Acceptance of Baking Powders 832
Doris W. McCray

Ambrose O'Pshaw, Detective. I 837
Nellie G. Herriman

New Books on Health 841

School and Health 842

Questions and Answers 846

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● Dr. Robert A. Kilduffe recently contributed to Hygeia a series of articles on the blood and its diseases. . . . Margaret Beard Gilpin, a mother who understands the problems of the home and the school, seeks to emphasize the interdependence of the two. . . . Robert H. Brotman, D.D.S., who has contributed many articles to Hygeia, presents an exposé of dental quackery.

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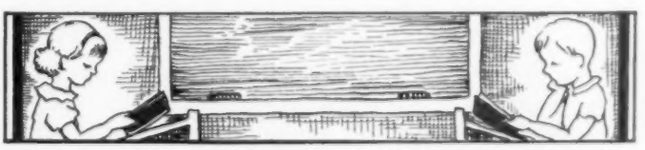
● Nellie G. Herriman, author of "Snickles and Snortles" and "Alice in Slumberland," begins another delightful serial story for children, young and old. . . . Dr. Hyman Cohen continues "The Eye Book." . . . Doris W. McCray, food consultant, discusses biscuit mixes which have been accepted by the American Medical Association's Committee on Foods.



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SEPTEMBER, 1934

Ready for School Again

WITH THE opening of the schools, parents are again confronted with the necessity for giving their children every possible chance for a successful school year. Much of the responsibility which rests on the parent is concerned with the health of the child. Repeated examinations made of thousands of children throughout the world indicate that a large majority of them, indeed as many as 60 per cent, suffer with easily correctable defects which impede their progress and hinder them from competition on an even basis with children who are physically fit. Defects of vision, disorders of the nose and throat, defects of hearing, diseases of the nervous system, diseases of the skin, and malnutrition are some of the most common conditions found in children when routine physical examinations are made during the school year.

It is customary nowadays to consider children entering school as belonging to one of two groups: first, those coming into school for the first time as preschool children, and second, those who are in the higher grades and have already had some consideration given to their health.

THE PRESCHOOL child is from 1 to 6 years of age. Most deaths among children of this age group are due to infectious diseases such as diphtheria, scarlet fever, measles and whooping cough. Certainly every child on entering school should have adequate protection against diphtheria by the use of the toxoid. In times of special danger there should also be protection against scarlet fever. Furthermore, enough is now known about measles and whooping cough to permit some protection against these diseases through detection of cases at the earliest possible time and removal of such cases from immediate contact with those who are well. The use of convalescent serum in measles and of new types of serum in whooping cough is being investigated, and the coming years may yield positive protective methods. Studies of children of preschool age have shown particularly the need for more extensive use of cod liver oil and of vitamin D in various forms in order to prevent the appearance of rickets and the defects of bone growth and of teeth; this diet deficiency is common in children living in city buildings and on sophisticated diets. Adequate examination by the dentist previous to the child's entering school is important for protection of his teeth.

THE GROWING child ought also to have an examination of his sight and hearing at regular intervals. His nose and throat ought to be looked after because infections in the nose and throat are associated with bad appetite, failure to enjoy proper exercise and to secure adequate rest, thereby resulting in some lowering of mental ability.

Among the most serious considerations, particularly in times of economic depression, is the question of proper nutrition. Far too often a child is sent to school with a glass of milk as his only breakfast and sometimes with merely a bite of fruit. The child in school is subjected to wear and tear, both physical and mental, such as does not occur at home. The growing child should not go to school without a good breakfast. Dr. Mary Swartz Rose, one of the most eminent authorities on nutrition,

EDITORIAL

has said, "One year of good feeding at the beginning of life is more important than ten years of feeding after forty years of age." A suitable breakfast with fruit, cereal, toast and milk is the best type of breakfast for a school child. The average child will not require meat or even eggs at breakfast. When these are taken, they should not be permitted to diminish the amount of cereal, which is exceedingly important for proper energy and nutrition. In many city schools there are now cafeterias in which children secure their luncheons. In most instances the type of food sold has been selected by competent authorities in home economics and nutrition who recognize the food values that are important for the growing child. In some places, however, the child's choice is unrestricted. Under such conditions children will buy sweet beverages, candies and delicacies, which have a primary appeal to the appetite, rather than the type of foods required for health and growth. Certainly the school cafeteria offers a splendid opportunity not only for providing the child with the right kind of food but also for educating him in the proper food values.

ANOTHER problem which is assuming increasing importance in these times is the number of accidental injuries and deaths of children of elementary school age. The crossing of streets at other places than suitable crossings, the playing of games in the roadways, running off the sidewalk into the street, the stealing of rides on automobiles and wagons, roller skating, jumping on or off street cars in motion, and the climbing of trees, poles and fences are some of the most common sources of accidents to school children. Moreover, the increasing vogue of the bicycle is responsible for an increased number of accidents on city streets. Parents must work with their children for the prevention of accidents. When the parents of the present generation were growing up, there were few such dangers as exist today. Street-cars traveled more slowly; there were no automobiles, and bicycles were ridden rather leisurely by ladies and gentlemen dressed in sufficient clothing to make an ungentlemanly "scorching" impossible. Today clothes of both young men and women cyclists are much more scanty, to say the least, and the opportunity for cuts, contusion, and bruises presents itself much more easily.

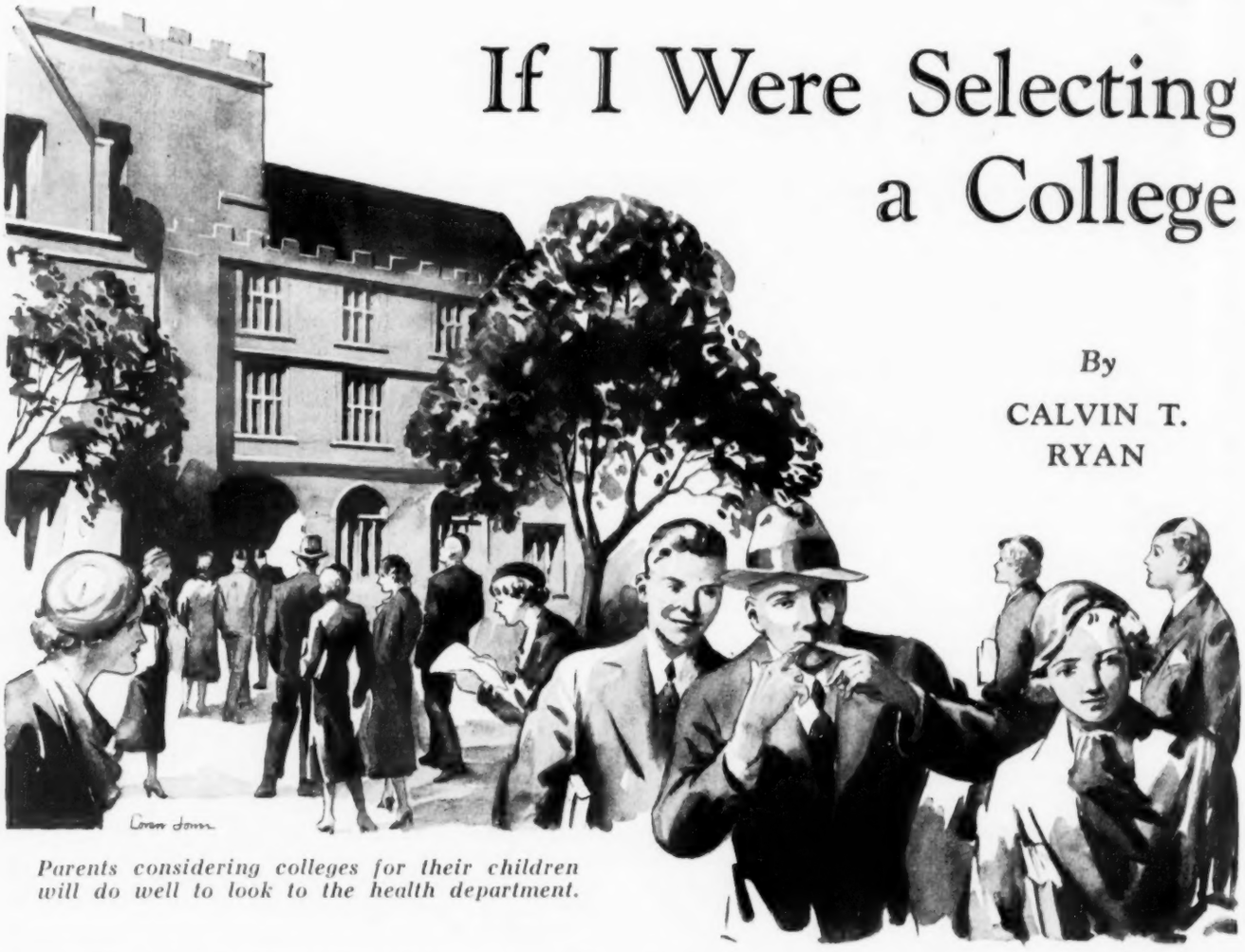
A centenarian was asked one time for an explanation of his long life. He pointed out that during the first seventy-five years there had been no automobiles and that during the last twenty-five years, because of his age, he had been compelled to stay indoors. The hazards to life associated with modern civilization and the increased use of machines are probably more numerous and more menacing than they have ever been before in the history of man.

There are many types of education. Under modern conditions education includes not only the fundamentals of reading, writing, arithmetic and geography, which are necessary to success in work, but also a knowledge of safety and personal hygiene, both of which are important in saving the child from crippling and disease, if not from death. In the school and in the home, every child is entitled to education regarding the functions of his body so that he may conserve these functions satisfactorily. By knowing the causes of disease, the child may to some extent protect himself.

THE MODERN school provides the child with good air, sufficient light, and general sanitary conditions to protect him against many of the inanimate hazards that used to abbreviate human life and bring about untold pain and suffering. Under these modern conditions in schools, children who are healthy and in full possession of their faculties are able to make remarkable progress in acquiring learning, reason and judgment.

If I Were Selecting a College

By
CALVIN T. RYAN



Parents considering colleges for their children will do well to look to the health department.

THERE ARE still some parents who take the college education of their children seriously; that is, they investigate the college at first hand. They do not rely exclusively on catalogs, on publicity or on advertising; neither do they select a college for their son or daughter because it is mentioned frequently on the sports page of the daily press. They are to pay out money for college education, and the future mental, physical and spiritual welfare of their child is concerned; so they do not take chances. They not only want their money's worth, but they are even more concerned that the investment shall benefit their child's future.

These parents know that a college education should be something more than a veneer; that it should do something to the subject that he cannot escape, something that he can never throw off even though he should want to. They know the difference between an education and a course to teach skill; that is, the difference between education and training.

Certainly one of the things the wise parent investigates is the health angle of the college. He wants to know whether the physical education department is merely a department of athletics for a few or whether it is a department whose primary interest is in the development of health habits and health attitudes in all students who attend the college. He wants to know whether his son or daughter will be taken care of in case of illness or accident. He wants to know, moreover, whether those in charge of the health work of the college are capable of advising corrective exercises, corrective eating habits and corrective life habits if these are needed.

I do not believe these are unreasonable demands. Similar demands are being made of all other departments. The speech department, for instance, is expected to detect speech defects and to offer corrective measures. Colleges are making diagnostic tests in most of the academic subjects and offering remedial work. Why should they not, therefore, do the same for such an important matter as health? It is entirely possible for students to enter college without knowing that they are suffering from certain disorders. I recall a girl who entered a college apparently in good health; at least her parents knew nothing of her condition, and she knew nothing of it. She was advised of her condition and warned of the consequences; but since the college had no way of enforcing the warning, the girl was allowed to go her way. Before she had finished her college course, she became ill and died suddenly. I recall another girl who came to college with a speech defect of which she had never been aware; she had not been

told in high school. In college her defect was noticeable, and she wanted to correct it. The man in the speech clinic diagnosed her case and advised her what to do, and now she is improving.

The health department has no other purpose of existing than that of promoting the health of the students. It must have objectives the same as any other department. Unfortunately many colleges subvert the health work to the physical education department, and in many cases the physical education department is simply a department of athletics. This is not true, however, in the better schools and colleges.

Teaching health to young people in the most active and the healthiest period of their life is no easy matter. Education in health on the college level, certainly for those students already in good health, is solely a matter of projecting the students twenty, thirty or forty years into the future. It is preparing them to be healthy in the future, in the more strenuous periods of their life. On the elementary and high school level, health can be taught through motivation that cannot be used on the college level. Furthermore, college students have usually formed their habits of life, including their health habits, and to change them is almost as difficult as to teach old dogs new tricks. The easy way out, of course, is to resort to meaningless games on the gymnasium floor or to competitive games and sports; all these are important and even significant but not always educative in any final sense.

Nevertheless, it must be recognized that a person is not educated, surely not in any liberal sense, if he does not know something about health habits and attitudes that are wholesome and those that are harmful. The sound mind in the sound body is no empty classic slogan. The relationship between the two is too close to permit the neglect of either one in the process of getting an education. A certain amount of knowledge is necessary for an educated mind. The same is true of the physical development. Health habits and attitudes must rest largely on knowledge of what constitutes health.

Health education on the college level should certainly enable the student to know his own physical and mental shortcomings. It should, so far as modern medical and physical knowledge goes, inform the student of the best way to overcome those shortcomings. In short, if the disorder is correctible by exercise, then he should be given such exercise. If it is a matter of diet, then he should be directed in his dietary habits. If it is eye disorder, ear disorder, nasal or throat disorder, whatever it may be, the department should see to it that the student is informed of the disorder and is directed in the best way to correct it. If I were selecting a college for my daughter, the college that most nearly offered the services mentioned would meet with my approval. In fact, I think I should consider such matters above those of whether or not the heads of the academic departments had Ph.D. degrees.

The health department of a college should reach into every other department of the college and into every phase of the student's life. In the matter of eating and sleeping, for instance, more and more colleges are providing dormitories for their students, especially for their freshmen. This action is taken, first of all, because a student has not really got out of college all that there is in it unless he has lived in a dormitory during his undergraduate days. But more important still is that service which the college can offer students in the way of providing regular life habits. At the close of the World War, I was sent to a sanatorium where I remained for nine months. When I was discharged, I entered Harvard; there I came under the guidance of the health department. The most important thing that the head of the department insisted on in connection with my manner of living was expressed tersely: "Keep away from the lunch counters." Some years ago the newspapers were filled with feature stories and news items about the men at Massachusetts School of Technology lining up each morning to get their bottle of milk and crackers. These men, a portion of the student body, had been found to be undernourished, and this drastic step was taken for their own good.

When the regulation that all freshman girls had to live in the dormitory went into effect in one state, the townspeople thought it was unfair to them. The college president was wise enough, however, to put the interests of the girls first, for not only are the girls supervised in their social life, but also they are looked after with reference to their eating and sleeping. To do his best work a student must have the right kind of food and in the right balance. To do his best work a student must have regular habits of sleeping and must sleep in healthy surroundings.

A parent should be as much interested in the dormitory life of his daughter as in the academic life she is to lead. I should want to know something about such a life before I sent my daughter to any college. The health department that stops outside the college kitchen, or kitchens, is not going to have complete supervision of all that touches the success of the student. It is not going to be able to assist the student to the fullest in forming habits which are of most vital concern to her future life.

Furthermore, the student who lives out in town, however indirectly supervised, is not going to reap the full benefits to be derived from an education in health. Conditions resulting from such a life are always a problem for the health department. In recent times many girls, especially in the Middle West, have found it necessary to work for part of their college

expenses. They accept work in homes where they frequently do the cooking, the cleaning, and the washing and ironing for the family in exchange for a place to sleep and eat. This is admirable when looked at from the standpoint of the ambitious girl, but it is usually harmful from the standpoint of the girl's health and social welfare. It is a persistent problem for college authorities.

Therefore health education for the college girl or boy should be not only corrective, so far as it is needed, but also constructive. The ideal is obvious, but the attainment of it is not always easy. The age and nature of the college student make it difficult to reach him. Unless he is in need of immediate attention, he is even harder to look after than when he was in the elementary school. To talk to a football star about his health is, to him, a useless thing. To try to get him to think of health forty years hence is like trying to get a child to wait until tomorrow for two sticks of candy.

Colleges are making more and more restrictions. In the past, health authorities have been able to advise but, not having any authority to enforce, they have wasted their advice and produced questionable results. With the backing of administrative approval, they are now accomplishing more and will accomplish even more in the future. Students who do not make a voluntary effort to improve their health and to build up a reserve for their maturity are asked to leave some colleges. In others a degree will not be granted to a student who has not learned to swim. In still others annual examinations are required, and a complete check is kept on students to see that they carry out whatever advice has been given to them. There is no reason why a college should not require the same definite improvement, the same specific knowledge and the same demonstrable ability in physical education, so called, as in any other kind of education. Underwriting the student as it does when it graduates him, the college should have some specific guarantee that the student will not fail society either physically or mentally. Health is too significant to be put wholly on a monetary basis; nevertheless, the actual cost of sickness, not only to the individual concerned but also to society, is something that concerns us all. For instance, loss of time is of supreme importance to the school teacher, but to the system in which she works it is something more than a money loss. It upsets the whole system. It interferes with the progress of the pupils. However much we may sympathize with her, a public school teacher who is repeatedly out because of illness is a public nuisance.

Health habits and health attitudes become the positive objectives of the health department. Unless students acquire good health habits which they can carry with them through life and unless they have acquired wholesome health attitudes which will support them in middle life and in old age, they have not acquired from their college education what they went to get or what they paid to get. It may be their own fault, but that does not alter the condition.

Health attitudes, which mean also healthy attitudes toward life, lead directly into the field of mental hygiene. Health departments of the more progressive colleges do not stop with the physical; they consider the mental as well. A student may be mentally sick, or mentally diseased. The student who is worrying about his school work or his finances is not in a good mental state to learn. Last year I learned of a student, a girl, who was living on one meal a day in order to make her money last throughout the year. Such students should not be permitted to remain in college. It is an injustice to them, to the college and to society. No college education is worth the sacrifice of health. No student can get the most from her college work if she is eating only one meal a day, and that a meager one, wholly unbalanced.

A college should have some one on its faculty to whom students may go for advice on matters neither wholly social nor wholly physical. The dean has to be the consultant in many colleges, but we are learning that there are not many deans who have had the necessary training to do this work completely. Colleges need the deans, but they also need a person especially trained to detect the mental quirks found in students and to help them straighten them out. There are always misfits, and colleges cannot allow them to go through four years' training, grant them a degree, underwrite them, and turn them out into society along with the more normal graduates. They will remain misfits, and their college degrees may be instrumental in their doing even more harm to society than they could otherwise have done.

Parents considering colleges for their children will do well to look to the health departments. The English department, the history department and the science department may be directed and manned by men and women with the highest degrees obtainable; they should be, but unless the health department is truly an active part of the institution, regarded as such by the administration and treated as such by the students, no student can get a complete education from that institution. The demands of the new age are going to be more specific, more trying than those of the old. There is going to be more leisure, but one is going to have to work harder while one is working and to work in a manner more exhausting to the nerves than man ever before experienced. A graduate who presents his diploma will also have to present something to show that he has been trained in health and physical resistance; otherwise society will consider him incompletely educated and inefficiently prepared for the work of modern life.

The Effect of Study and Physical Exercise on YOUR CHILD'S SLEEP

By

GLENVILLE GIDDINGS

A SUBJECT which has long been discussed and debated by mothers and teachers alike is whether extremely active play by a child during the late afternoon or concentrated study shortly before retiring for the night has any appreciable effect on the child's sleep.

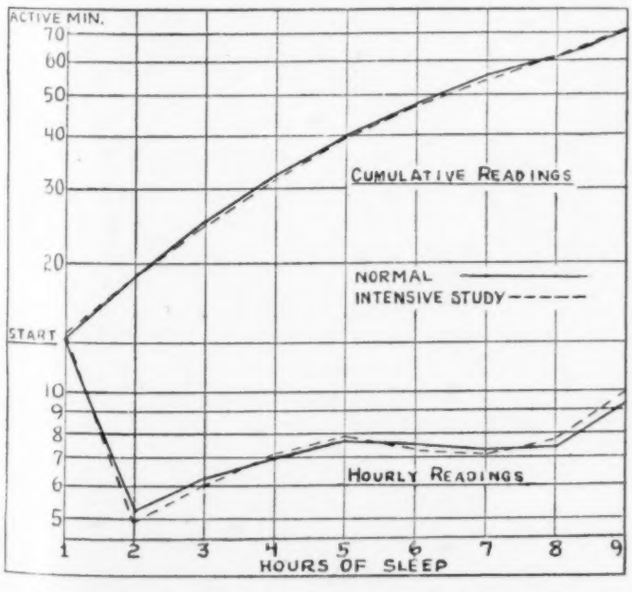
It is comparatively easy to find a champion to argue either side of either question. Undoubtedly their beliefs are sincere and their opinions are grounded on what they consider first hand conclusive evidence. Therefore, in any unprejudiced analytical review of this subject, the important thing to decide first of all is whether the testimony, that is, the method followed in making the observations, is entitled to a standing in court.

Virtually every mother has observed and can relate examples of specific nights when her child was restless and unable to sleep soundly, and she feels that she can connect such a condition directly with some period of excitement, hard play or studying which required intense concentration immediately prior to bedtime.

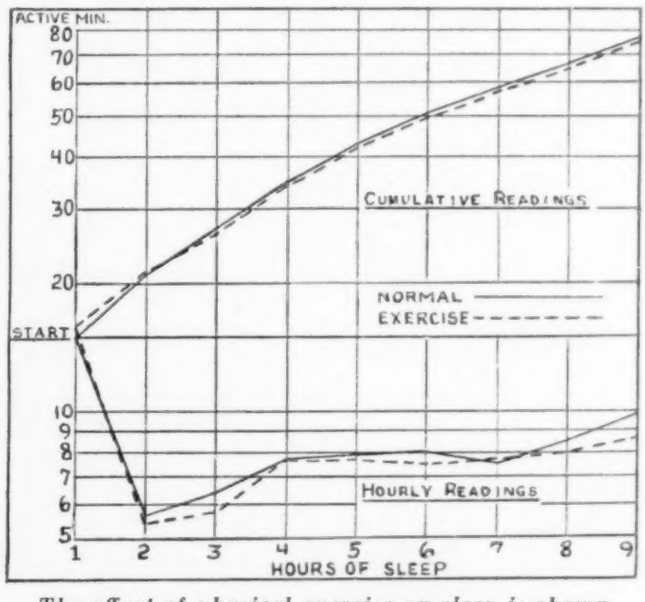
Yet it is obvious that when only one or two children are involved, the test is inadequate, and hence the conclusion reached cannot be applied fairly or accurately to children as a whole. What is needed is a cross-section of the play and study habits, and the consequent effect on sleep, of a group of normal girls and boys of various ages, grades in school, temperament and background. To get such a cross-section requires a "controlled" test. By this I mean that a representative group of children must be subjected to the "abnormal" conditions, the effect of which one desires to test, and their reactions must be carefully set down. Then the sleep of this group must be checked and reported over a similar period of time without the suspected "disturbing" conditions of hard play or intense study being present.

Equally as important is the necessity of eliminating the "human equation" from the test. By this term is meant the absolutely imperative need of making the observations on sleep tranquillity in such a way that the children will not be aware that their every movement in bed is being checked and noted. Also it is equally essential that the information is secured without having to depend on the ability of a human being to note and to report a child's movements during the sleep period.

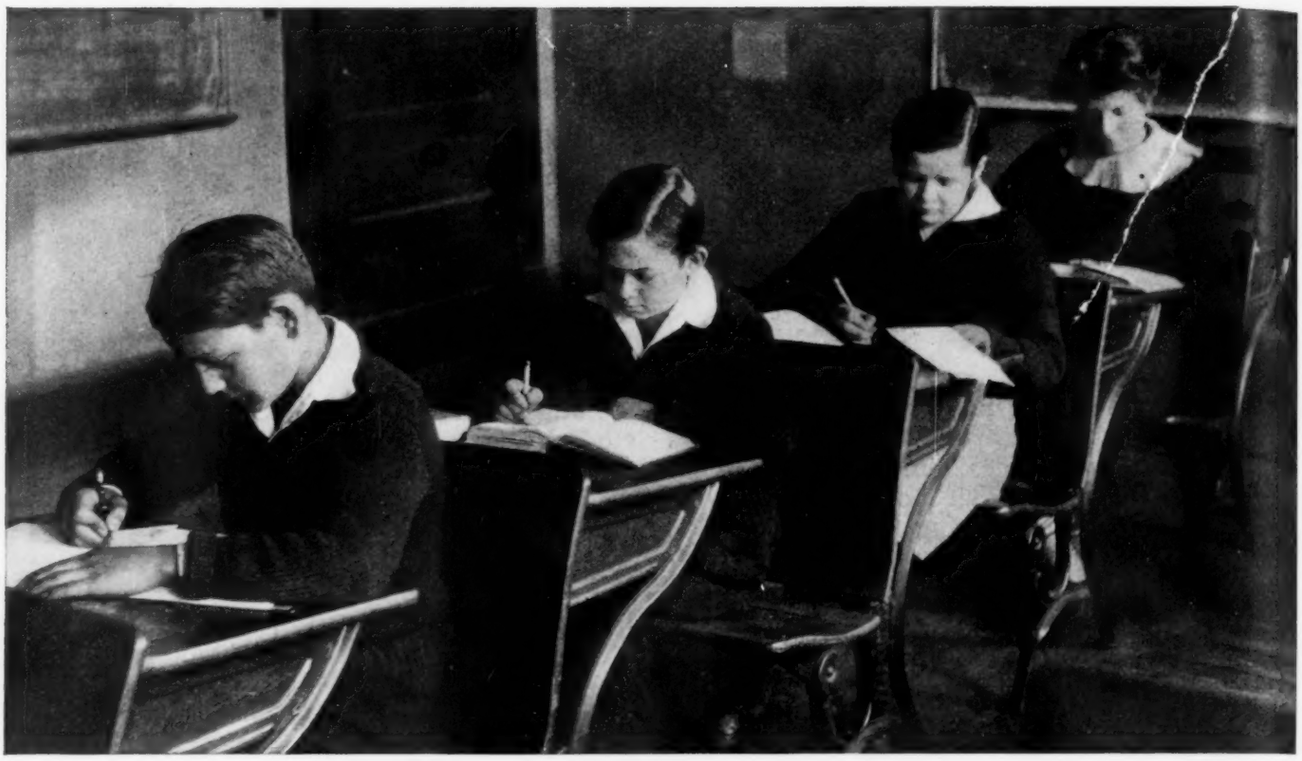
Let me say here, too, that this discussion and the conclusions to which it points are not



Comparison of the average normal sleep pattern with the pattern of sleep after study.



The effect of physical exercise on sleep is shown by the average sleep patterns of twelve children.



Study by normal children before retiring has no appreciable effect on their sleep.

intended to hold a brief for either side of the controversy as to hard play and hard study versus sound sleep. It is merely a description of a method followed, and the conclusions reached respecting hard play and intensive study I consider to be both fair and accurate when applied to any group of normal children.

Twelve children were considered an adequate test group. Each child was to be his own "normal"; that is, his reactions after periods of intensive study and hard play would be compared to his reactions in bed on nights when he had not undergone such tests.

Children Tested After Study and Play

The ages of the children selected ranged from 9 to 14 years. The twelve in the test class were divided into three groups of four each, two boys and two girls. This grouping was done according to their school grades, four from the fourth grade, four from the sixth grade and four from the seventh grade.

In the tests to determine the effect of intensive study on a child's sleep, a teacher was assigned to each group of four. This insured close supervision. It was essential to have the complete cooperation of the children; and accordingly, to insure that result, a prize was offered to the child in each group who established the best record in solving the mathematical problems put on the board during the intensive study periods.

Study work was carried on every second night during the test period. This plan made it certain that the element of follow-up fatigue did not enter into the tests.

Each group met in a separate room so that there would be no interference in the concentration that they were expected to give to the studying. In advance of the meeting, each teacher had arranged a sufficient number of mathematical problems, the solution of which would require approximately one hour. One problem at a time was placed on the blackboard. The children were invited to bring their solutions to the teacher as soon as they were reached. After the first problem had been solved by any one of the group, the second problem was given. At the end of one hour of such study the child who had solved the most problems correctly received a merit mark which was posted in the room to add to the competitive spirit of the undertaking. Final prizes were awarded from these merit marks.

Study sessions were concluded at 8:15 p. m., and by 8:30 p. m. the children were undressed and in bed, with lights extinguished and instructions to remain quiet and to go to sleep.

Electrical Device Used for Accuracy

Attached to each bed was a mechanism so sensitive that every movement of the child, every turning between 8:30 p. m. and 5:30 a. m., was recorded in another room. Through an electrical device a fountain stylus pen recorded these reactions on a roll of paper which passed under the pen at a uniform rate of speed. There was a pen for each child, and different colored ink was used for boys and girls. The paper was stamped electrically at intervals of one minute. A complete night's record for the twelve chil-

dren comprised a 47 foot roll of paper. By the division of minutes, it was possible to say that any minute in which a child moved, however slightly, was an "active minute." By counting these minutes for the entire nine hours in which the child was in bed, an accurate picture of the active minutes and the inactive minutes during a night's sleep was obtained.

At the conclusion of the intensive study tests the results were tabulated for the entire group. Then, after an interval of several days to insure that no carry over effects of any kind persisted, the active and inactive minutes in the sleep of these children were checked for a period of fifteen consecutive nights when they had not studied before retiring. Weather conditions and other extraneous factors were rendered as nearly identical as possible.

Normal Child May Study at Night

Comparison of the two fifteen-day periods, of the study nights with the nonstudy nights, showed conclusively, in my mind, that intensive study of their school lessons by normal children before retiring has no appreciable effect on children's sleep. That this may be more readily seen, I present a graph plotted on ratio paper. The hours of sleep are listed at the bottom of the graph with a scale to the left of the graph showing the active number of minutes; the lower limb of the graph shows the body movements, hour by hour, of the child or children under observation, and the upper limb of the graph is a summation of the minute movements throughout the night.

A similar plan was then followed in a second study, which was undertaken to determine whether hard physical exercise would have any effect on the sleep of normal children.

A group of twelve children was selected, equally divided as to sex and of ages varying from 9 to 14 years. Beginning at 7:15 p. m., or one hour and fifteen minutes after the evening meal, the children were taken outdoors on an illuminated basketball court and given exercises under the direction of the resident nurse. The exercises consisted of skipping rope, the usual setting-up exercises, skipping and running. The procedure was to have the children exercise three minutes and then to rest two minutes. Each exercise was done in rotation, the cycles being repeated until 8:15 p. m. If a child became obviously fatigued, he was asked to drop out and to return to the dormitory.

At 8:15 p. m. the exercises were completed, and the children were sent to the dormitory to undress and to retire for the night. Lights were extinguished, and the machine was started at 8:30 p. m. As in the intensive study experiments, these exercises were done every other night in order to avoid follow up fatigue.

Physical Exercise Does Not Affect Sleep

At the conclusion of the exercise period of fifteen nights, the sleep activity on these exercise nights was determined and plotted on reports similar to the study charts. Then similar studies were taken on fifteen nights when the children had not exercised.

This experiment led to the conclusion that a normal child can take rather intensive physical exercise in the late afternoon and early evening without appreciably affecting his sleep one way or the other.

Physical exercise in the late afternoon and early evening does not affect children's sleep one way or the other.

One wonders how many early voyages of conquest failed because of scurvy.

FOOD POISONING

THE IMPORTANCE of food, not only in the maintenance of health but as a source of disease, is a matter of general knowledge as evidenced both by the detailed dietetic laws of such ancient peoples as the Hebrews and the Arabs and by many old and familiar proverbs. The old saying, "What is one man's meat is another man's poison," may well be explained by present knowledge of allergic phenomena; and there is more than a modicum of truth in the axiom that "we dig our graves with our teeth."

There is ample material awaiting the patient and philosophic observer who will gather and reflect on the data illustrating the importance of food on the development and history of peoples, for the panorama of history abounds in such illustrations. One wonders, for example, whether the hordes of Genghis Khan and the armies of Timur the Lame, whose conquests had a permanent influence on the map of the world, would have traveled so fast and so far, had it not been for the simple dietary which enabled them to carry large amounts of food in small compass.

The excessive luxury of the Roman nobles and the cry of the Roman populace for bread and the circus equally foreshadowed the dissolution of the greatest empire of its day; and the picture of the body of Foulon, once a minister of Louis XVI, dangling from a Paris lamp post with the mouth stuffed with grass is a picture of the early days of the French Revolution that will not soon fade from memory.

One wonders, too, how many early voyages of exploration and of conquest failed because of the disablement and death resulting from scurvy. It is hardly possible to appreciate what might have been the result on the history of England and of Europe if the dysentery, scurvy and enteritis, which resulted from the use of tainted food and which decimated the crews of the makeshift English navy of Queen Elizabeth, had struck before instead of after the defeat of the Spanish Armada.

It would hardly be possible within the limits of any contribution of reasonable length to discuss in detail, or even to outline in brief, the many varied relations of food to the production of disease. The results of dietetic excesses, the

aftermath of continued diets deficient in vital elements, the disastrous effect of starvation and malnutrition, the dangers of obesity and the equally definite dangers of the so-called reducing diets, and the varied diseases consequent on vitamin deficient diets are but a few of the many ways in which disease and food may go hand in hand. The importance of food in the spread of such diseases as typhoid, cholera, dysentery, tuberculosis and various other infections furnishes a chapter in itself.

I wish to confine my discussion, however, to those sudden outbreaks often involving large numbers of persons and popularly spoken of as "food poisoning." These occurrences are not infrequent and are the sources of newspaper headlines recording the sudden illness of those attending picnics, church suppers and even formal banquets. While spoken of as food poisoning the condition is not necessarily or even commonly caused by the presence in food of poisons in the accepted and common sense of the word. For the reasons later to be discussed, it should more properly be spoken of as food infection or food intoxication. While modern methods of food distribution and preservation have greatly lessened the frequency of such occurrences, they are, nevertheless, not unknown; and they emphasize the necessity for continual vigilance in their prevention.

Outbreaks of this kind, always sudden, frequently extensive, and occasionally accompanied by fatalities, always present similar pictures. Within from two to six hours after the consumption of the food, a large majority of those who ate it, and especially those who consumed it in quantity, are suddenly stricken by an acute and severe gastro-intestinal disturbance. The characteristic picture comprises paroxysmal and almost uncontrollable attacks of vomiting, severe abdominal pain, marked intestinal upset, chilliness, and extreme prostration or even total collapse.

These symptoms, together with the fact that a large group of individuals is simultaneously attacked a short time after having attended some function where food was served, would give a community reason to believe it was confronted with an outbreak of what has long been popularly known as food poisoning or ptomaine poisoning. For many years the cause of such outbreaks was more or less a mystery. A generally accepted conception ascribed them to toxic products resulting from the decomposition of proteins for which was coined the term "ptomaines," derived from the Greek word, *ptoma,* meaning a corpse.

This theory was largely based on the fact that meat which had spoiled was apparently the most frequently involved food, and also on the fact that watery extracts of such meats were found to be poisonous for animals. However, continued investigation demonstrated the presence of toxic, or poisonous, properties in watery extracts of a variety of substances including vegetable matter, so that these, sometimes spoken of as sepsins or vegetable alkaloids, were also regarded as causes of food poisoning.

Almost simultaneously with the discovery of ptomaines, however, in about 1880, certain students of the problem called attention to the fact that there was, apparently, a close relationship between food poisoning in man and disease in the animals from which the foodstuff came. Definite proof of such relationship was not forthcoming until several years later, in 1888, when Gärtner, a German bacteriologist, investigated a fatal case of food poisoning resulting from the consumption of beef. The cow had been killed because it was suffering from a severe intestinal disorder. Gärtner found in both the animal and its human victim a small organism which he called Bacillus enteritidis.

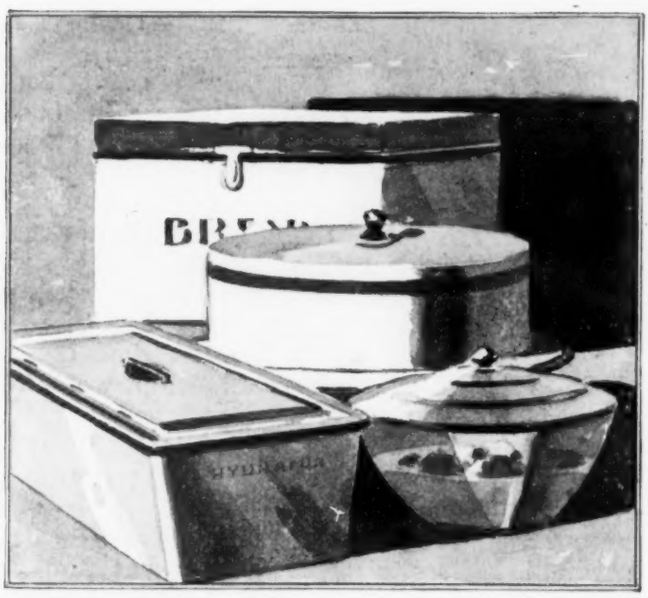
Shortly after this discovery, another bacteriologist, van Ermengem, in 1895 corroborated Gärtner's observations and proved the correctness of his assumption that food poisoning followed contamination of the food with Gärtner's bacillus. As a result of his own studies of another outbreak he proved furthermore that another bacterium, Bacillus botulinus, might also be the cause of severe and even fatal food poisoning. Bacillus botulinus was so named because the outbreak investigated by van Ermengem followed the eating of sausage, the word *botulus* meaning a sausage.

These studies were a severe blow to the ptomaine theory and inaugurated the bacterial theory of food poisoning; namely, that toxic effects produced by food were dependent on the presence in the food of bacteria that were in themselves capable of producing disease, an assumption soon proved beyond doubt by the subsequent bacteriologic studies of many investigators.

The bacterial theory was not at once generally accepted, because foods other than meat were known to cause food poisoning. Indeed it was at one time customary to speak, not of food poisoning but of meat poisoning, cheese poisoning and milk poisoning in accordance with the food found to be at fault. As a matter of fact, as shown by numerous studies throughout the world, food poisoning is really the result of food infection by bacteria regardless of the nature of the food in question.

Food poisoning in the sense of an acute illness due to injurious properties of the food, is, then, always the result of the presence of bacteria in the food; but, as the mechanism whereby the illness is produced is not always

By ROBERT A. KILDUFFE



Food must be protected from contamination by air and flies.

the same, there is now a distinction made between food infection and food toxemia.

Food infection signifies the presence of bacteria of what are known as the Gärtner group; that is, Bacillus enteriditis or organisms so closely allied as to be differentiated only with difficulty by the bacteriologist. Among these organisms are bacilli of the paratyphoid group, so called because they are the cause of a disease in many respects resembling typhoid; these are Bacillus suipestifer, Bacillus aertrycke and a number of other bacteria now commonly spoken of as the Salmonella group. This group is composed of bacteria commonly found in the intestinal tract, frequently the cause of disease in animals and now recognized without dispute as the most common cause of food infections.

Relatively recent investigations have incriminated also Staphylococcus aureus, so called because it produces a golden yellow color when artificially cultivated. This organism hitherto has been most commonly associated with infections that are characterized by the production of pus, such as boils.

As has been said, the symptoms of food poisoning are rather characteristic. When, as is often the case, the condition comes on relatively soon after the consumption of the infected food, it is rather easily recognized. When it is delayed in appearance, as occasionally happens, and the symptoms do not appear for from eight to twenty-four hours, food infection may not be suspected; or, as several meals may have intervened, the last food eaten may be incriminated, whereas the condition is really the result of something eaten long before.

The outstanding features of food infection are those of a gastro-intestinal disturbance, characterized by nausea, vomiting, abdominal cramps, diarrhea, fever, and often prostration which may be so severe as to become collapse. The symptoms vary in intensity in accordance with the degree of bacterial contamination, the amount of infected food eaten and the susceptibility of the individual.

In food toxemia, on the other hand, while there may be signs of gastro-intestinal irritation in the early stages, these are not usually accompanied by fever and are soon overshadowed by the appearance of marked and alarming symptoms of nervous disturbances. These, indeed, are so characteristic as to indicate in themselves that the condition is one resulting from food toxemia or intoxication rather than from food infection.

The sufferer from food toxemia complains, first, of disturbances of vision, usually dimness and inability to focus on near objects, and later of inability to swallow or speak, the result of paralysis of the throat muscles. Muscular weakness, even to the extreme degree of being unable to raise the head or move the arms or legs, is a striking and common symptom that is so characteristic as to be practically diagnostic.

There is no fever; and when death occurs, which is not uncommon, it is the result of weakness of the heart muscle because of failure of this organ; fatigue and collapse of the muscles of the respiratory system may also result in death. This striking difference between the symptoms of food intoxication and food infection arises from the essential difference in the conditions themselves.

Food infection, as has already been said, is the result of the presence of one or more of a variety of bacteria that are capable in themselves of producing diseases of the gastro-intestinal tract. When infected food is eaten, these organisms are taken into the body of the patient where they remain alive, propagate, invade and attack the body tissues, and so produce illness. While, to some extent, the acute symptoms of food intoxication result from the presence of toxic substances produced by bacteria while they are growing in the food, the food stuff in general serves merely as the means whereby the bacteria gain entrance to the human body.

Food toxemia or intoxication, on the other hand, is the direct result of the action of the bacterial poison or toxin produced by the bacteria during their growth in the food. As the only organism thus far shown to produce such a toxin is Bacillus botulinus, food toxemia is now commonly spoken of as botulism.

The essential difference between food infection and botulism becomes apparent from the fact that whereas the presence of the living bacteria is required for food infection to take place, in botulism only the presence of the botulinus toxin is necessary; the organisms themselves may have died, and the food may be sterile.

The toxin of Bacillus botulinus is one of the most powerful of the known bacterial poisons and exerts its action even when taken into the body by mouth in contradistinction to another equally potent toxin of bacterial origin, that of the lockjaw bacillus, or Bacillus tetani.

It is thus apparent that all food poisonings are essentially bacterial poisonings and the expression either of food infection or of food intoxication. Hence, while the type of food is of relatively little importance, certain foods are more frequently involved in food infections and others are more commonly concerned in food intoxications.

The chief offenders in food infections are meat, milk and mixtures containing these products, while the foods responsible for botulism are chiefly sausage, pork and preserved vegetables, such as spinach, olives and beans. There is a definite, logical and, indeed, somewhat obvious reason for this difference.

As has been said, food poisoning seldom, if ever, occurs from fresh food but is always associated with food prepared a few hours before eating. The infection of such food may occur in a variety of ways and may take place either during its preparation or, as is more commonly the case, while it is waiting to be served.

A recent outbreak was caused by eclairs later found to be infected with Staphylococcus aureus, organisms which have also been found in outbreaks from infected milk, devil's food cake and cheese. The avenue of invasion by these bacteria was presumably the pressure gun with which the eclairs were filled with custard.

Staphylococci are common organisms, are present in the skin in large numbers, are often found in the nose and throat in the absence as well as in the presence of throat infections and are always present in the air. It is easy to see how foods that are allowed to stand uncovered at room temperature become infected and, as the organisms grow readily in such material, how the initial lodgment of even a few bacteria leads eventually to heavy contamination.

The prevention of contamination of this kind lies in obvious precautions to lessen the possibility of its occurrence. Those engaged in food preparation should be free from illness even of minor character and should be scrupulous in the matter of personal cleanliness. For equally obvious reasons, all utensils should be thoroughly cleaned, and in the case of foodstuffs such as custards, immediate and continued refrigeration is essential until the product is served.

Cakes and pastries must not be allowed to stand about uncovered but should be placed in cases or protected in some other manner from air contamination or infection from the feet of flies. Scrupulous, continuous and persistent cleanliness must be the watchword.

The avenue of invasion of foodstuffs infected by bacteria of the Gärtner group is not always as obvious or as readily determined as in cases of botulism. The most frequent offender in former times was the diseased animal that had been killed for food. This path, however, has practically been closed, and the possibility of such poisonings has been eradicated by modern methods of food inspection and handling. Food infection resulting from meat now almost without exception signifies infection of the meat by the careless and unclean distributer or after its delivery to the consumer. In such cases it may come from the use of unclean instruments for cutting up a carcass or from the unclean hands of the handler or of those who prepare the food for the table; such persons are known as carriers.

A carrier is a person who, without suffering from the disease or presenting any evidence of its presence, nevertheless carries within his body its causative agent which may pass from him into food. Such carriers have been the source and starting point of epidemics of typhoid and paratyphoid, of diphtheria and of septic sore throat.

Botulism, as has been said, is due to the presence in food of one organism, Bacillus botulinus. This bacterium is one of those which thrives in the absence of oxygen; this accounts for its presence in canned goods. Moreover, its ability to form spores is a matter of practical importance. Spores are the resting stage of bacteria; but not all bacteria are able to form spores. The importance of spores arises from the fact that they are able to resist influences such as heat and refrigeration, which readily kill the bacterium in its normal stage, and that they are capable of lying dormant until favorable circumstances arise when they germinate and grow into full fledged organisms. These facts have led to the use of special precautions in the canning industry, so that botulism is now almost always the result of infected home-made products and practically never of those commercially prepared.

It is of practical importance to note that Bacillus botulinus is incapable of producing toxin in the presence of more than 8 per cent of salt or over 50 per cent of sugar; nor will the toxin be formed in an acid medium.

In all home processes of preserving, canning and pickling it is essential to use only fresh, clean food, to employ a sufficient degree of heat to kill spores, to allow for thorough penetration of the containers by the heat, and to use a container that can be effectually sealed.

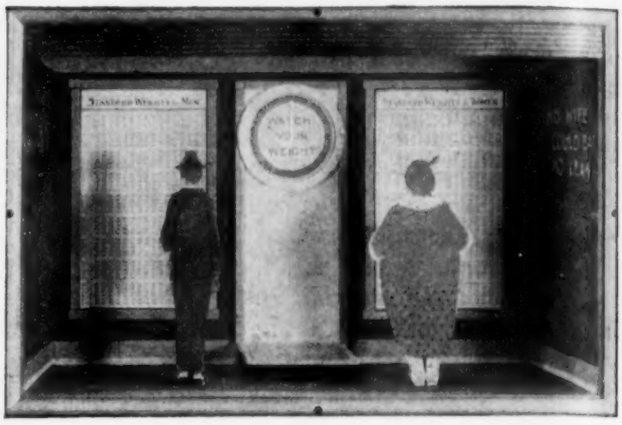
The botulinus toxin is resistant to heat to some extent but is destroyed by boiling temperature. As this organism ferments sugars with the production of gas, it is a wise precaution to discard any can show- *(Continued on page 852)*

"Health—

is the state of being hale, sound

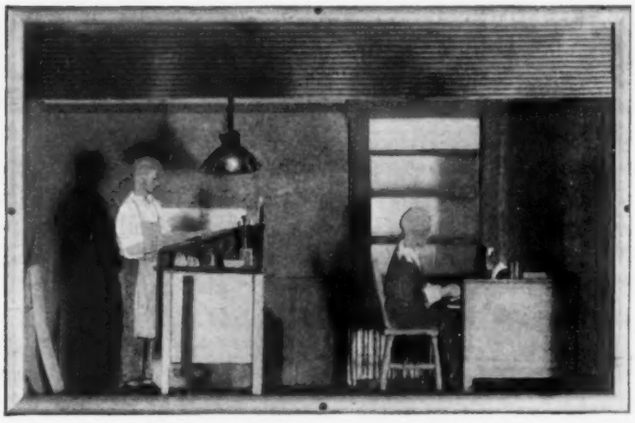
SUNSHINE AND FRESH AIR

Sunshine and fresh air are valuable assets to good health. For "indoor" workers sunshine is often difficult to obtain; it often can be combined with the exercise and recreation period or the rest and relaxation period.



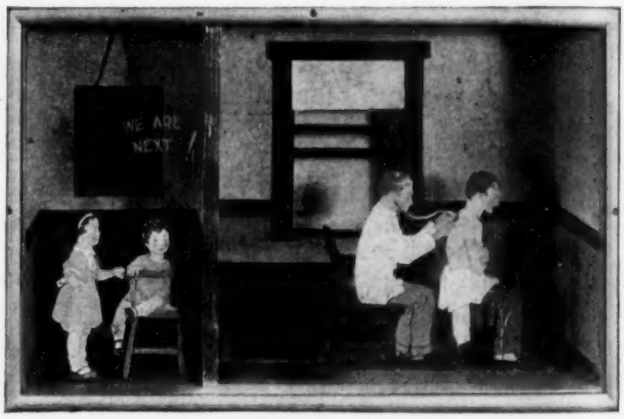
WEIGHT CONTROL

The control of overweight in adults is largely a matter of partaking of just enough food to meet the daily demands for energy and no more. There is no panacea in mechanical devices which attempt to fool the fat; food "fads" are absurdities, and drugs which really reduce are dangerous.



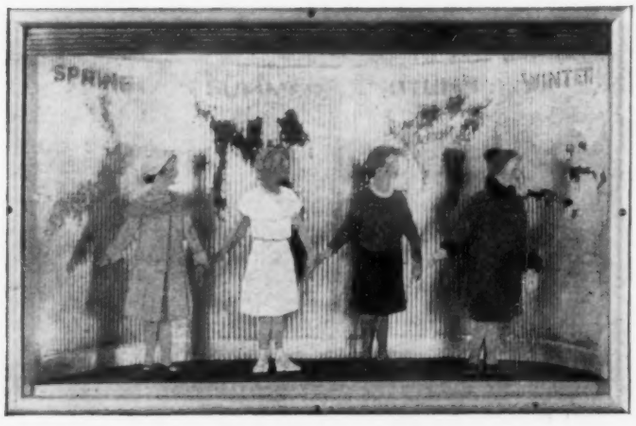
GOOD WORKING CONDITIONS

Both in factory and in office, attempts have been made increasingly to improve working conditions so that the individual is not compelled to remain long hours every day at tasks which imperil health or life or limb.



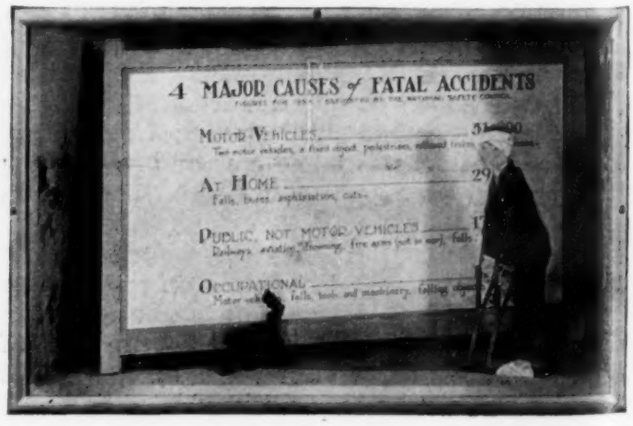
CORRECTION OF DEFECTS

"Go to the doctor before the doctor has to come to you" is sound advice. Minor defects of youth may later result in chronic conditions; as a person gets older, attention to one ailment or another may be necessary to prevent partial invalidism or premature death.



SENSIBLE CLOTHING

The proper amount of clothing is a matter of comfort and good sense and not one to be determined by calendar, fad or fashion.

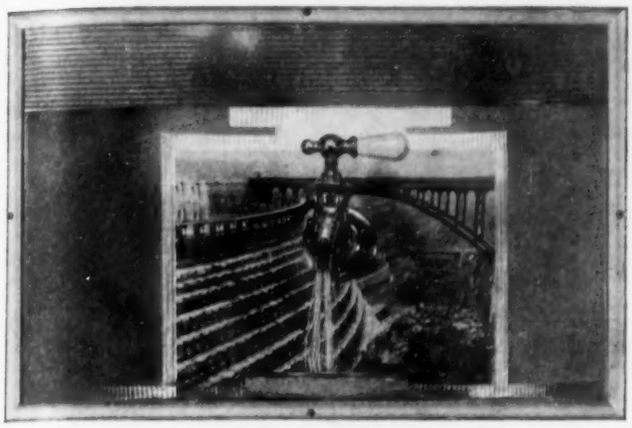


AVOIDANCE OF ACCIDENT

"Watch your step" whether crossing a street or stepping into a slippery bathtub; "watch your hands" that they do nothing to endanger themselves or other persons.

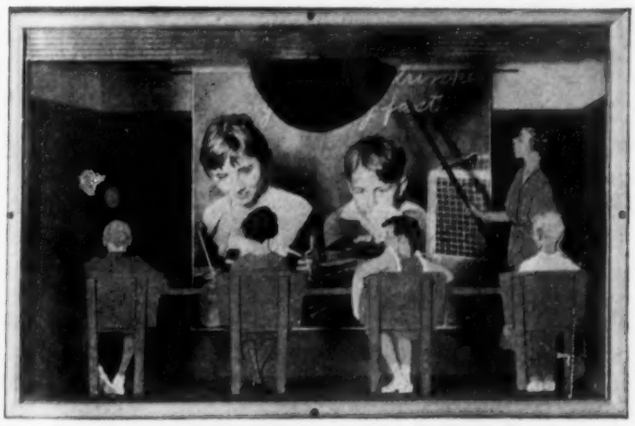
or whole in body, mind and soul."

—from the exhibit of the American Medical Association at A Century of Progress.



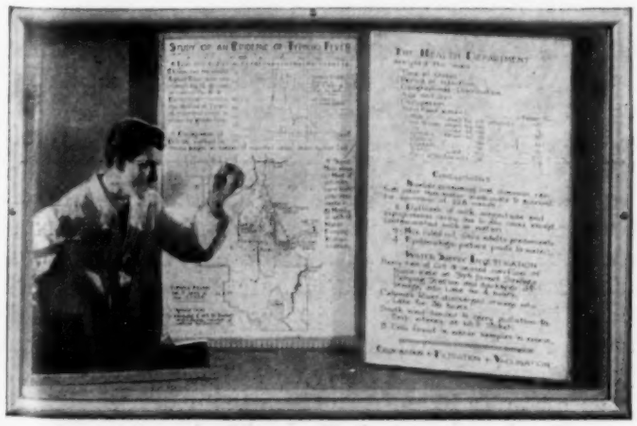
SAFE WATER SUPPLY

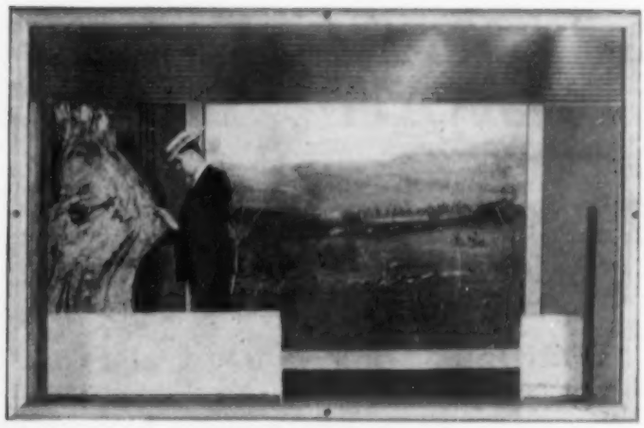
Pure water in adequate amounts is a separate problem for each community. Practically all municipal water supplies must be purified by one method or another, according to local conditions.



HEALTH INSTRUCTION IN SCHOOLS

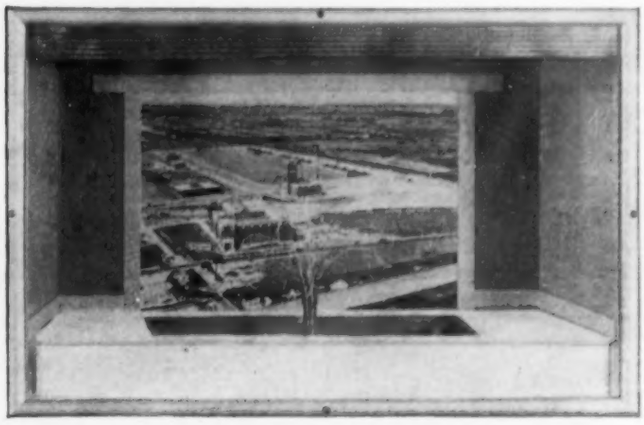
Since education is the preparation of children for life, it is necessary to include health instruction in the school system. This is usually done by teachers, often with advice from the school physician or the health officer and his staff.





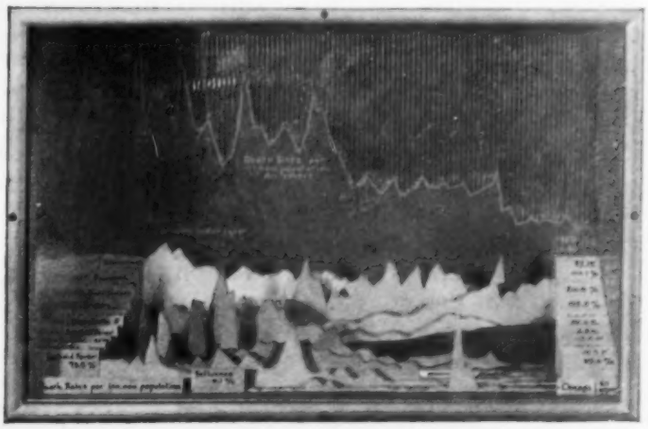
FRESH FOOD SUPPLY

Fresh meats, fruits and vegetables must be of a wholesome nature and sold to the consumer under sanitary conditions. The health officer supervises this activity through trained food inspectors.



SEWAGE DISPOSAL

Methods of sewage disposal vary according to local conditions. Treatment of the sewage and methods of disposal must be supervised by the health officer through sanitary engineers trained for the purpose.



VITAL STATISTICS

It is necessary to record births, deaths, causes of death and cases of sickness in order that diseases may be studied and controlled.

EPIDEMIOLOGY

The study of epidemics and their prevention is a special branch of medicine requiring several years of study after the medical course is finished.

Helping the Stuttering Child

By

WENDELL JOHNSON

H. Armstrong Roberts

Parents should observe carefully how their children use their hands from earliest infancy, in order that they may know their natural tendencies and allow them to develop.

PARENTS of stuttering children are full of questions and, like the girl who was always making up riddles, they do not know the answers. However, there are answers to most of their questions, and there will be better and better answers as scientific research continues. During the past ten years, dozens of research scientists in many modern laboratories have been busy with the problem of stuttering. They are still busy, working harder than ever, with better laboratories and with greater understanding of the problems which they are trying to solve. A year from now, certainly five years from now, there will be more information available than there is at present. Unfortunately, a half million children and as many adults are stuttering in our midst. What can be done for them right now? What do the scientists have to tell us today?

Among the questions parents most frequently ask are these: What is the difference between stuttering and stammering? Just what is stuttering? How can we tell whether or not a child is a stutterer?

Stuttering and stammering are really the same. The one term, stuttering, is now used almost exclusively. You will have no trouble in recognizing stuttering if your child has a severe case of it. The stutterer's speech is jerky, hesitant and produced with great effort. He repeats the first sound of the word, as in "d-d-dog." During his speech perhaps there are pauses, and during these pauses he is trying hard to talk. Certain muscles that are supposed to move together fail to move together; it is said that the child's tongue sticks or that his jaws lock. Perhaps you say that your child does not really stutter, but that he only hesitates, that he stumbles over a few of his words, or that his speech is not as smooth as you think it should be. Nevertheless, he stutters, and he is going to be handicapped in school, in business and in social life whether you say that he stutters or that he merely hesitates.

Having some idea as to what stuttering is, parents always want to know whether there have been any scientific studies of it. They wonder whether anybody really knows anything about it.

There have been many scientific studies of stuttering. Most of them have been made during the past ten years. In the laboratories of one large university, several hundred stutterers and normal speakers have undergone numerous tests and experiments. Their nervous currents have been photographed by means of special motion picture cameras. Their voices have been photographed and analyzed. Hundreds of records of their breathing have been made. Their heredity has been studied. Their personalities

have been analyzed, and their autobiographies, fascinating and valuable, have been examined. This research has occupied an entire laboratory staff over an eight year period, and its results have made great changes in theories about stuttering and in methods of treating the disorder. In other laboratories, also, the methods of modern science have been called into action in an effort to clear up the stutterer's situation.

In that case, there should be some hope for a stuttering child whose parents eagerly inquire: Can stuttering really be cured? How long does it take to cure stuttering?

Stuttering can be cured. In some cases it is extremely difficult to cure the disorder; in other cases it is easy. What will cure one stutterer may or may not cure another one. In general, younger stutterers respond to treatment more successfully and more quickly than do the older ones, although there are exceptions to this rule. There are also exceptions to the rule that mild cases are easier to cure than severe ones. Stutterers 31 years old have been treated successfully. How long does it take to cure stuttering? Probably the safest answer is that it takes from two months to three years, depending on the age of the stutterer, the severity of his condition and the diligence with which he will work. Of course, this statement holds only if an effective method of treatment is used. Few cases are hopeless, but some cases are rendered so only because of indifference and poor working habits on the part of the stutterer. Even the best treatment must be given a thorough trial.

This leads naturally to another question: If stuttering can be cured, can it not also be prevented from developing in the first place?

Not only can stuttering be prevented, but if the disorder is ever going to be wiped out, as certain diseases have been in a measure wiped out, it must be done largely through preventive measures. If you want to prevent stuttering in your child, there are four general rules that you should follow. First, do not interfere with the way in which the child naturally uses his hands, because the hands are connected with the brain, and the brain is the vital organ of speech. Second, keep your child healthy. Third, give your child wholesome thoughts, interests and attitudes toward himself and toward other persons; in other words, observe good mental hygiene. Fourth, do not hurry your child in his efforts to learn how to talk. Give him a good opportunity to learn, and then let nature take its course. These are simple rules, and if all parents were to observe them, the number of stutterers in this country would be reduced from 1 million, the present number, to a few thousand. Few persons realize that in the solution of this problem lies one of the greatest opportunities for increasing human efficiency and human happiness.

In spite of the fact that stuttering can be cured and even prevented, too many parents are inclined to overlook the seriousness of speech defect and to neglect it. Frequently, they ask: Is not the child likely to outgrow his stuttering?

It is conservative to say that nine stutterers out of ten do not have the miraculous good fortune to outgrow stuttering in the natural course of events. It is for this reason that the problem of stuttering is so serious and that hundreds of thousands of dollars are being spent every year in laboratories in the effort to find better ways to cure stuttering. To wait for the stuttering child to outgrow his difficulty is to face the problem with mere wishing instead of thinking. Of course, there is a slight chance that the child might outgrow his stuttering, just as he might survive an attack of infantile paralysis without expert care, but it is not sensible or necessary to take such a chance. Stuttering is a deeply rooted affliction, and in practically every case some kind of systematic treatment is necessary for a cure or even for relief. The more thoroughgoing the treatment, the more likely is the cure or the improvement to be permanent. In many cases no treatment at all leads to more serious difficulty with increasing age, to serious social and vocational handicaps and to a distorted outlook on life.

On learning that stuttering is a serious affliction, most parents ask this question: What part does heredity play in this connection? Does stuttering tend to run in families?

Several hundred family trees have been investigated with this question in mind, and important conclusions have been drawn. It is true that stuttering does tend to run in families. Most stutterers report that there are other stutterers among their families or relatives, but that does not necessarily mean that stuttering is inherited. Perhaps, as in the case of tuberculosis, it is a certain type of bodily make-up that is inherited. In fact, that is what leading authorities at the present time believe. They say that the stutterer probably inherits a certain type of physical constitution, which under certain conditions gives rise to stuttering, although under other conditions it would not give rise to the disorder. It is not likely that heredity in and of itself is completely responsible for any large proportion of stuttering cases. Unfortunate methods of training children play a large part, sometimes along with heredity, in producing stuttering in most cases. Physical diseases and injuries also play a part. I had this matter of heredity in mind when I said that stuttering can be prevented and cured. It is one of the glories of modern science that it sometimes shows the way to improve on heredity or at least to prevent heredity from realizing its worst possibilities. This is true in relation to stuttering.

The parents of a stuttering child are interested not only in the stuttering but also in the child, his general condition and his general welfare. Among other things, they want to know what stuttering indicates concerning the child's mind. They want to know whether there is anything wrong with the mind of a stuttering child.

It is interesting that in this connection there are two extreme opinions, both popular and both wrong. According to one view, stutterers are below average in intelligence; according to the other view, stutterers are exceptionally brilliant. In fact, some persons believe that stutterers think so fast that their tongues cannot keep up with their thoughts. I am quite sure that certain ambitious parents cling to this flattering theory with all their hearts.

The mental ability of stutterers is one of the things that has been carefully studied, and the results show that stutterers are normal, or average, as far as intelligence is concerned. In colleges and universities the stuttering students are generally more intelligent than their glib tongued classmates, but that is because a stutterer usually has to have good mental ability if he is going to get through college in spite of his handicap. The fact has nothing to do with the cause and nature of stuttering. There are dull stutterers, and there are bright ones; but on the average the stutterers are no duller and no brighter than their talkative fellows.

Parents often ask: Are stutterers normal in every way except in their speech? Are there certain other defects closely related to stuttering and often associated with it?

For the most part, stutterers are normal except for their speech. There are a few defects that are sometimes found among stutterers, but with a few exceptions these are not extremely serious. In order to illustrate some of the defects that are occasionally associated with stuttering, I shall describe a case in which several defects were present at the same time. This was the case of a girl of high intelligence who stuttered so badly that she was practically mute. She was also unable to read, mainly because many of the words appeared to her as though she were seeing them in a mirror. "On" looked like "no" and "saw" looked like "was." In addition, she had a defect in handwriting to such a degree that she could hardly write a letter. Her hand simply would not "track"; the muscle movements were not coordinated. One of her most bothersome difficulties was the tendency for her mind to "go blank" now and then. The technical name for this is aphasia. She would suddenly forget what she was going to say, or she would suddenly lose track of what another person was saying to her. After two years of hard work, this girl succeeded in practically overcoming all these handicaps. When I heard her deliver a good public lecture a few weeks ago, I was reminded of Helen Keller.

Occasionally there is found a stutterer who writes upside down or backward. One little girl who stuttered had a natural tendency to write both upside down and backward. Such astonishing disorders as I have been describing are rare, but there is some relation between them and stuttering, because speaking, writing, reading and hearing are rather closely associated in the brain. Aside from these occasional instances, stutterers do not usually have any serious defects other than their speech disorder.

The parents' interest in their child's general welfare often leads them to ask certain questions regarding the importance of stuttering in the child's life. They want to know in what ways stuttering is a handicap and whether stuttering has a bad influence on the child's personality.

Careful attention has been given to this matter by scientific workers. One investigator made a study of the lives of eighty stutterers in an attempt to find out what effect stuttering had had on their attitudes and on their behavior. In general the personality make-up of most stutterers is quite normal, although some of their attitudes are rather exaggerated. In general, they are somewhat inclined to be shy, worried, discouraged and sometimes bitter. This is not so much the real cause of stuttering as it is the result of it, for many stutterers look on their speech disorder as a great handicap and as a source of keen humiliation, and such stutterers are most likely to be timid, gloomy and cynical. For a young man to find himself making peculiar sounds and facial grimaces in an effort to speak to a beautiful girl is quite enough to make him avoid social situations. This sort of thing should be frankly faced and well understood by parents.

Much depends on the stutterer's attitude toward the defect. To one who looks on his stuttering in a matter of fact way, regarding it as the natural result of natural causes, the disorder is much less of a handicap. A few stutterers have the happy ability to see in their difficulty many advantages. One boy said that writing was the art that stuttering had given him; he had become a writer because he had found it so difficult to talk. There is no denying that the stutterer has a much richer emotional life than a normal speaker could hope to have, although many of his emotional experiences are depressing. Because he is so often discouraged, he is often unusually and keenly pleased. It is like hitting oneself on the head with a hammer in order to see how good it feels to stop. Many stutterers report that they do not have many friends but that the friends they do have are unusually loyal and intimate. It is what one would expect. Friendship in spite of something is a much more profound and satisfying thing than ordinary friendship. All these statements point to the important conclusion that there are

many ways of looking at stuttering and what it means, and the way in which the stutterer looks at his disorder determines in large measure the extent to which it is going to depress him, embarrass him and handicap him.

The lives of many stutterers have been convincing demonstrations of the fact that it is possible to stutter and yet to lead a rich, happy and useful life. I know several stutterers who are college professors, active both professionally and socially. I know some who are highly successful business executives. There are also a number of doctors and lawyers among the stutterers whom I know. What is their secret? In large part it is this: They are frank about their defect, and they do not try to conceal it as a dark secret. They are not ashamed of it. They admit that they stutter, and they calmly proceed to make the most of their natural abilities. This is the most desirable attitude for parents to encourage in their stuttering children.

Of course, it is not enough for parents to know that although their children stutter they can nevertheless lead happy and useful lives. They want to know how stuttering can be cured. They ask: What exactly can we ourselves do in the treatment of stuttering?

The first thing to which one must give careful attention is the way in which the child uses his hands. Strange as this may sound at first, a little discussion will make it appear logical. The hands are closely connected with the brain, and the brain is the most important organ of speech. You can have all the speech muscles there are, but if you do not have the proper organization in the brain, you cannot talk. The left hand is associated, by means of nerve fibers, with the right half of the brain, and the right hand is associated with the left half of the brain. In turn, the left half of the brain is associated with the speech muscles on the right side of the body, and the right half of the brain is associated with the speech muscles on the left side of the body.

Moreover, the speech muscles on the right side of the body must move together with those on the left side if speech is to be normal. This means that the two sides of the brain, in sending nervous currents to the speech muscles, must work together in delicate harmony. It is possible to disturb this harmony between the two halves of the brain by interfering with the way in which the child naturally uses his hands, because the two hands are connected one with one side of the brain and one with the other side. You can see, then, what havoc can be wrought by changing a left-handed child to right-handedness. It upsets the balance between the two halves of the brain, and stuttering is one of the common results of this.

Much can be done toward curing stuttering by helping the stutterer develop his natural

Ewing Galloway

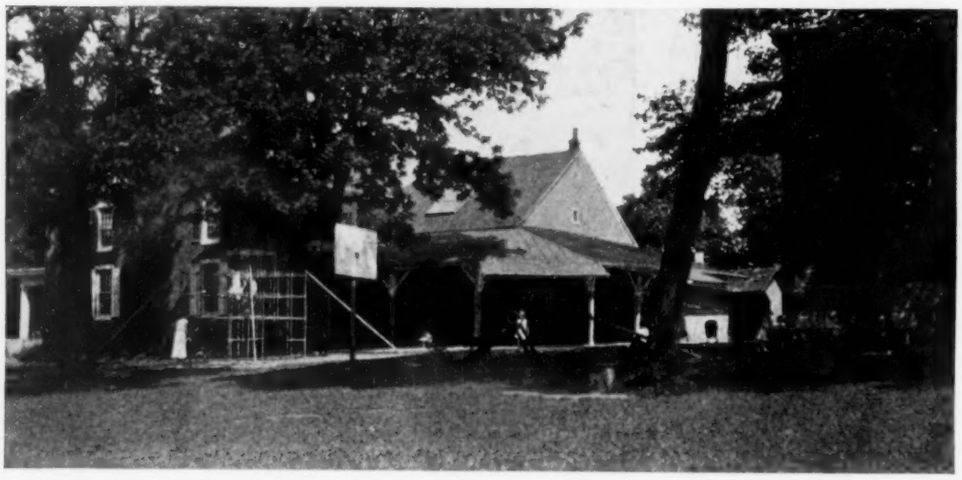
Having the child do a great deal of writing is an aid in developing his natural handedness and in stabilizing his speech mechanism.

handedness, by making him right-handed if nature intended him to be so and left-handed if that is his natural tendency. This tends to develop or to restore the proper development in the nervous system and brain; this in turn tends to stabilize the speech mechanism. Having the child do a great deal of writing, throwing, drawing and so on is an aid in this connection. Frequently it is impossible to tell whether a child is naturally left-handed or right-handed without the aid of modern laboratory tests. Parents should observe carefully how their children use their hands from earliest infancy, in order that they may know their natural tendencies and allow them to develop. If a child is left-handed he should by all means be allowed to remain so. There is no advantage to be gained by changing him. The development of left-handedness is part and parcel of his basic physical growth, and to interfere with it is to tamper recklessly with the natural development of his nervous system. Stuttering is only one of the misfortunes that may result from such practices.

The second thing to watch in the treatment of stuttering is the child's general health. Improper diet, lack of exercise, irregularity in sleeping, eating and other habits, and severe diseases, especially those with high fever and those of the nervous system, play an important part in causing stuttering and in aggravating the condition. These things should be carefully guarded against. A good physician can help a stutterer in a basic way by showing him how to build up general health. *(Continued on page 809)*

The School and the Home:

A MOTHER TAKES INVENTORY OF SOME MUTUAL OBLIGATIONS



I should expect the school to provide adequate playground space.

By
Margaret Beard Gilpin

I HAVE three young children. What should their school ask of me as to their health? Foremost educators recognize that health is the primary aim of education. In the matter of health, if anywhere, lack of cooperation between parent and school means that the work of one is undone by the failure of the other. What is my responsibility?

There is first the old idea that health is important but essentially negative. It is expressed by Dr. Richard Olding Beard as follows: "The old notion of health—and it sticks in many people's minds today—was not *being well,* but constantly *getting well.* We expected the human machine to get out of order. We were forever looking for something to happen to us, and then we undertook to do something about it." As parents, we look after the sick child according to our ability and opportunity in a more or less efficient way. He certainly gets our attention until he gets on his feet and is said to be well again. The sick child, again quoting Dr. Beard, is compared to a drowning man: "When we see a man drowning, he must be pulled out of the water—but would it not have been better to teach him to swim?"

And so we come to what may be called positive health, or the more abundant life. Here is where parents and many physicians often fail. Is my child in every way as well as it is possible for him to be? If he has any defect, large or small, am I looking after it with everlasting faith in the possibilities of the growing human body? Do I have a tired child, overstimulated by the many activities of family and school life? Do I send him back to school on Monday worn out by an overcrowded week-end? Do I have a record of the hemoglobin content of my child's blood? Is he struggling with the fatigue of 70 per cent hemoglobin when he should be bounding along joyously with 90 per cent? Is he getting cod liver oil or viosterol as needed, or am I like the mother of two young children who said to me, "We don't bother with cod liver oil, and we seem to get along," and in the next breath said, "My children's teeth are certainly poor." Do I fail to see that food values and vitamins are related to the nutrition of teeth. Do I know that my child's teeth, eyes, ears and nose are in a healthy state? Is his posture good? Is his muscular development good? Do I encourage outdoor and other nervomuscular activity by as good equipment as I can afford and by helpful interest, or does my child sit in the movies, passive in body and mind, while external stimulation is poured over him?

Having made an inventory of his health, and these are only a few of the many items to list, have I done what I can to prevent disease laying hold of him? Has he been vaccinated and been given toxoid or toxin-antitoxin, or am I forever taking a chance? Has he good health habits? Have I taught him that it is both good breeding and applied Christianity not to pass on colds? Do I cooperate when the school tries to prevent the spread of contagious disease?

I owe it to the school to send my child there in the most positive state of health possible. The school cannot be expected to get results from a broken down machine. Every school has examples of serious failure by parents in these health lines; I presume that none of us is entirely without reproach. The job of building positive health is never completed. Angelo Patri says, "School is wasted on a child who is not physically fit from his head to his heels."

If I, the parent, do my part, what should I expect the school to do with the health of its

A Partnership

Outdoor activity should be encouraged by the best equipment the parent can afford.

children, to make a living reality of its principle that health is a foremost aim of education?

First, I should want every child attending school to be required to have, either in or out of school, an adequate periodic health examination, and I should want the school to insist on follow-ups of the defects discovered. I should gladly do this for my own child, and for his protection I should expect attention to be given to unfortunate physical conditions, such as tuberculosis, developing in other children. It is not just to allow the work of the whole school to be hampered by the drag of the child whose bodily machine is not up to normal working capacity.

Next, I should expect not only that the child having a contagious disease would be eliminated but also that the child exposed to such disease would be kept out of school until he is past the danger period. Why allow a disease to be active all year if it can be stamped out at once?

As an important part of the problem of contagion I should expect that children and teachers with colds would be kept at home. Can there be any meaning to "Health First" when a sniffling, sneezing child is allowed to sit beside my child? He is thereby allowed to bring home a cold to my family of five, said cold being then quickly multiplied to five colds, at least one of which may be expected to terminate in fever, earache, bronchitis or one of the minor pulmonary afflictions. This may happen not only in my home but also in the homes of the twenty or twenty-five other susceptible children in the classroom.

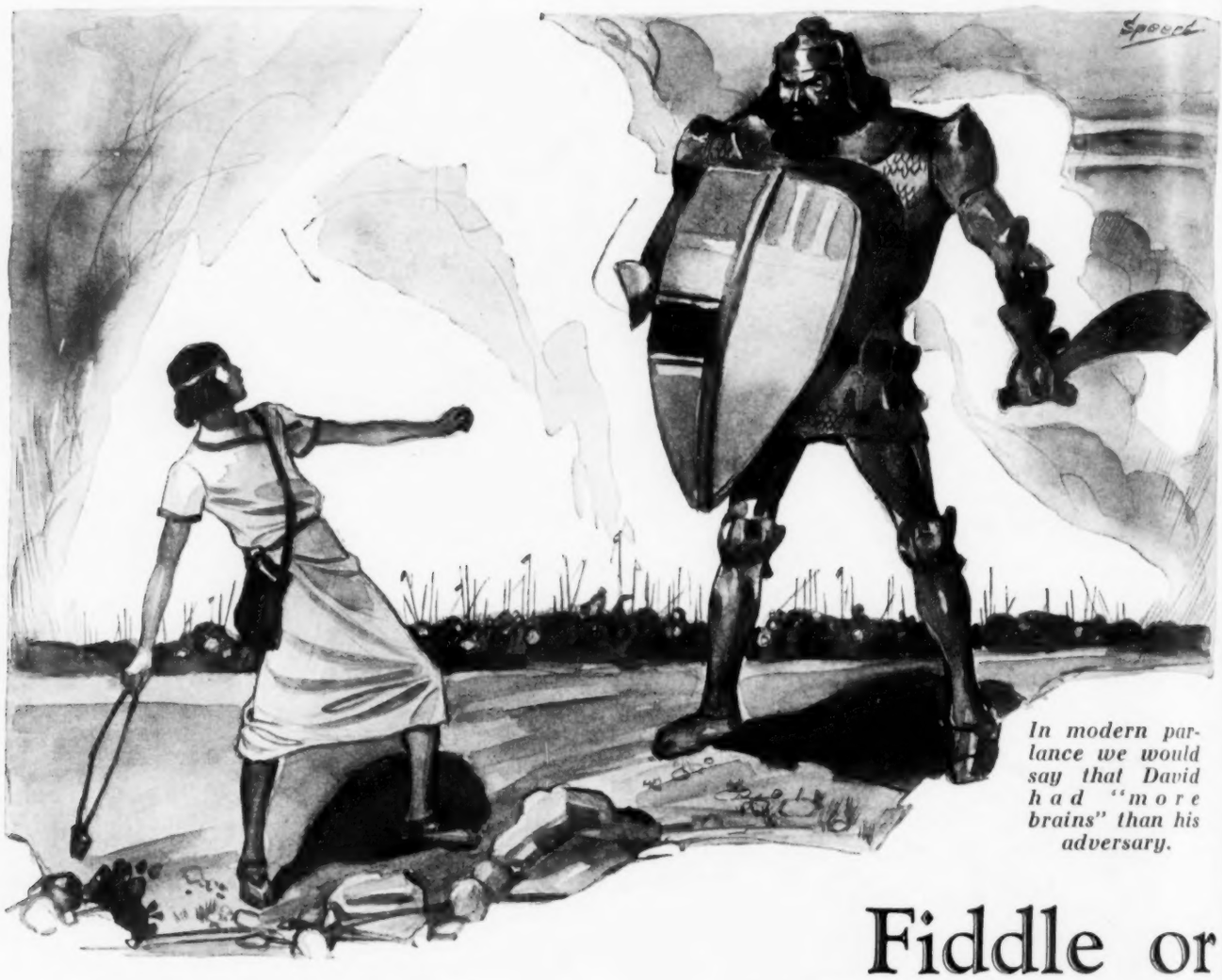
I look to the school also for a healthful equipment. This means well lighted and properly ventilated rooms, heated, at the child's breathing height, not over 70 F. It means clean toilets and drinking fountains that are really sanitary. The desk and chair that are used by my child should really fit him, so that he will not develop bad posture. The ideal is no fixed desk and no long periods of sitting still at academic work, but alternate periods of desk work and work involving free bodily movement. I should expect adequate playground space. Why do boards of education erect large modern school buildings, as they have in my town, with scarcely enough space around them to hold all the children when they are standing in line?

I should count on the school to teach health habits, which should aid my maternal efforts by preaching the value of vegetables, brushed teeth, clean hands, early bedtime, outdoor play and all the primary essentials of building strong bodies.

As its most constructive effort, I should look for the school to provide athletics, ideally one hour a day, certainly not less than three hours a week. It is of no use to try to build up healthy bodies by a few spiritless calisthenics taken when standing by a desk in a room and led by an overburdened teacher who is corseted, high heeled and in her street clothes. I should look for active play directed by experts in physical training; this exercise should be taken in the open air when possible, in order that the joy and zest of good sport may have a chance to develop growing bodies.

Stanwood Cobb, head of Chevy Chase Country Day School, says in "The New Leaven," "This motto should be emblazoned on the walls of all the school-rooms of the world: 'HEALTH MUST COME FIRST.'" I should expect the school to which I send my children to be honestly motivated by this motto in all its activities and attitudes.

Together as parents and as educators, as taxpayers and as voters, let us speed the day when home and school shall each do fully its part in building healthy bodies as a foundation for clear minds and happy spirits. If we must think in terms of dollars, let us remember the old adage, "An ounce of prevention is worth a pound of cure."



In modern parlance we would say that David had "more brains" than his adversary.

Fiddle or

Both Make the Tune, and Likewise

How big was Alexander, Pa,
That people called him great?
Was he like old Goliath tall,
His spear a hundred weight?

AS CHRONICLED in these lines from the old McGuffey reader, some connection between greatness of achievement and bigness of body has been suspected for a long time. Had this not been the case, the Phillistines would hardly have risked their all on the giant from Gath, for the Phillistines were no fools. However, their champion was outclassed in his display of military cunning by a stripling of not more than ordinary size for his years. In modern parlance we would say that David had "more brains" than his adversary. Unfortunately, although it is recorded by Josephus that Goliath had twelve fingers and twelve toes, the cranial dimensions of neither of these ancient heroes have been handed down to us.

While such evidence of a relationship between physique and mental ability is negative, the general impression still prevails that there is a relationship. To fit into such a theory, the giant from Gath must, of course, be dismissed as a freak exception who "does not count," and the evidence from Josephus would seem to help in establishing this conclusion. Our own military hero, George Washington, was much above the average stature for men of his day. While he is said to have had large hands and feet, there were no supernumerary appendages to these, and he was considered altogether of rather fine proportions. However, the joy is taken out of any attempt at establishing the hypothesis of mind-body relationships by the recollection that Napoleon was less than 5½ feet tall and, in his Austerlitz days, was otherwise ill favored of body; but, again, perhaps Napoleon had as large a head as Washington.

In many other fields of activity there are heroes with large physique. Wordsworth was "of very fine heroic proportions." Goethe was an "Apollo." Dumas was 6 feet tall and well built. Leonardo da Vinci had an impressive physique. Spohr was of "herculean proportions."

On the other hand, there arises the figure of De Quincey whom Carlyle called "one of the smallest man figures I ever saw." Beethoven

was no taller than Napoleon, while Benjamin Franklin was even shorter, although these two men were strongly built in other respects. Hobbs and Mill were splendid men, but Bacon and Kant were about as frail specimens as could be found; it was said of Kant that "possibly a more meagre, arid, parched anatomy of a man has not appeared on this earth."

Abandoning for the time the matter of physique and mentality, perhaps the relationship of health and vigor to mental accomplishment may furnish a simpler problem. Perhaps Goliath was suffering from the disease known as acromegaly, or gigantism, and maybe at the time of his last encounter he had one of the blinding headaches which often accompany this condition.

More than one student of Napoleon's career has attributed the defeat at Waterloo to minor ailments which, however, did not keep him from sitting his horse for nearly eighteen hours with only one brief rest. Whether or not his health had anything to do with the outcome of this conflict, historians remind us that the battle of Fontenoy was fought and won against great odds by a general who was suffering from dropsy and who had to be hauled to the scene in his bed.

Apparently there is no way of relating spiritual breadth to physical bigness, if there is a

Fiddle-Stick?

Mutually Dependent Are Mind and Body

By J. F. ROGERS

relation, unless it is by brains. The hat band then becomes a possible measure of genius and of the degree of intelligence among minor mortals. Old Thomas Fuller observed that in the fool "Nature generally hangs out a sign of simplicity. It is stamped on the figure of his body; their heads sometimes so little that there is no room for wit, sometimes so long that there is no wit for so much room." From this observation, even in the circumference and other dimensions of the head there is no sure index of what may go on inside the head; but Fuller measured only with his eye.

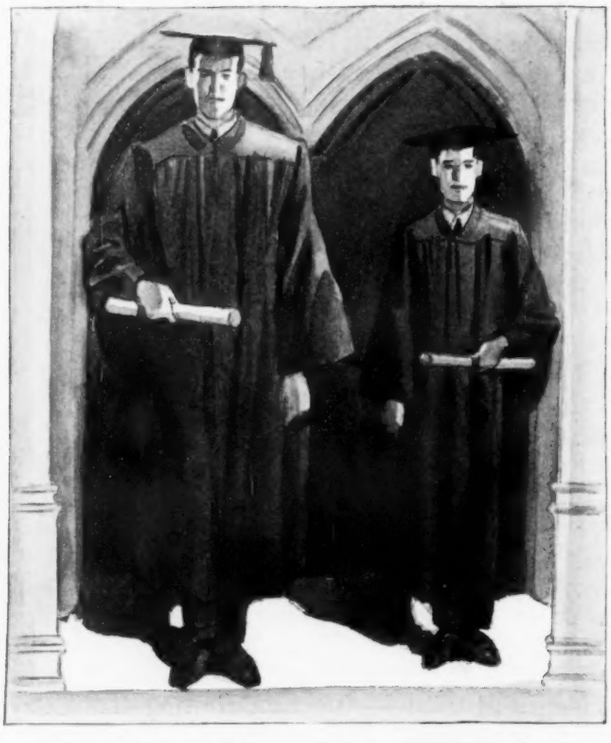
The application of instruments of precision to many human beings means painstaking and persistent work, and man was inclined to pure guesswork on this intimate and interesting subject of the relationship of mind and body until that exact and statistical mind, housed in an asthmatic but abundantly vigorous body, Francis Galton, appeared on the scene. A little over a half century ago, Galton sent out from his psychologic laboratory in Cambridge a request for the circumferences of the heads of a considerable group of his fellow British believers in exact measurement rather than in surmise. He averaged these measurements and compared them with the average of 10,000 of the general run of Englishmen of similar ages. Galton discovered that, as a rule, his distinguished fellow scientists had larger heads than their fellow citizens. Encouraged by the results of this experiment at long range, he became more scientific and applied the tape first hand to 2,000 Cambridge University students. He found that those who secured honors surpassed in girth of head by ¼ inch those who merely squeezed through their examinations or those who failed to pass. He concluded that "there exists a slight but sensible relation between size of head and intelligence," but because of wide variation above and below the mean, "there is no possibility of using this relation to make even rough predictions" as to scholarship.

The ball of the statistical, scientific study of the relationship of mind and body was set rolling and with such momentum that, to date, more than 200 investigators have applied instruments of precision of one kind or another to every possible part of the human anatomy, and the dimensions found have been set over against the results of such measures of mental ability as school marks or rate of school progress through the grades and more recently the intelligence quotient, or reaction to intelligence tests.

Measuring students by the thousands, a dozen or more investigators have found that on the average and always with plenty of exceptions on both sides, the brighter child has the larger cranium. Nor does this mean that the average smarter child is merely possessed of a "swelled head."

The important items of height and weight came under investigation early. A Russian, Gratsianoff, first applied the rod and scales to school children and in 1889 reported that the more "successful" pupils were, on the average, larger than their fellows. Soon after this, W. T. Porter began his classic studies of 35,000 children in the schools of St. Louis and found that the better students were heavier and taller than their plodding fellows. For example, boys of 11 in the sixth grade were 5 pounds heavier on the average than those of the same age who were in the first grade.

Some thirty or more students in this country and in other countries, some taking additional physical measurements and tests, have raked over this matter of height and weight to satisfy themselves that their predecessors had not made a mistake; and, in cases in which the comparisons were fair as regards age, sex and nationality, the results have always been the same. No matter how the battle in the Valley of Elah turned out, the youth who excels in his



Many "A" students are below average height.

school tasks or in intelligence tests is, on the average, taller, heavier, bigger of chest and stronger of arm than is his fellow schoolmate. For example, in one school system the average boy of 10 years who was one year behind the usual grade for his age was 2.8 pounds lighter than the average; if he was two years retarded, he was 6.1 pounds lighter, and, if two and a half years behind, he was 11.6 pounds lighter. On the other side of the picture, the 10 year old child who was one year ahead of the usual grade was 4.1 pounds heavier than the general average run of scholars; the child two years ahead was 12.3 pounds heavier, and the pupil who was accelerated two and one-half years weighed 14 pounds more than the average.

That repeated word "average" must not be overlooked, for among the "A" students there was a large sprinkling of many who were below average weight or height, while among those ranking "D" in scholarship there were many who were of more than average physique.

Leaving out mere size of the body as indicative of the degree of intelligence, what of the condition of the body as related to the condition of the mind? What did Juvenal mean by his much quoted but ambiguous request of the gods for a "sound mind in a sound body?" When we mouth the phrase, do we ask for two things or for one? Do we mean that we are not thoroughly sane if we are ill and that we are not mentally far seeing if we are physically crippled? Apparently this may be the case, for those who are extremely ill are often "out of their heads," and an aching tooth will disturb the cogitations of a philosopher. To return to the giant from Gath, I have already suggested that, although superior in size to his youthful opponent, he may have been afflicted with a disease of the pituitary gland which turned him into a giant. This disease is often accompanied by injury to the nerves of the eye, and perhaps he was not able to see and dodge the stone from David's sling.

The advent of the medical examination of school children has, to those interested in the relation of mind and body, furnished an endless stock of comparable facts about the condition of every observable organ from the eyes to the feet. Researchers have compared sharpness of vision with sharpness of intelligence, dulness in hearing with dulness in studies, the effects of adenoids on intelligence quotients, and the relation of teeth, tonsils, nutrition and posture to the ability of their possessors to absorb and to give out learning. Then there are diseases, acute and chronic. May these not damage the mind? Great mental work has been turned out by victims of tuberculosis, and the idea has even occurred to those who take the apparent for the real that tuberculosis is essential to the exhibition of genius in these cases. Unfortunately about half of the population has had some degree of intimacy with the germs of tuberculosis without showing any evidence whatever of accompanying mental superiority, and it is rare indeed that a work of genius issues from a sanatorium for those ill with this disease.

Are children who have poor vision, dull hearing, decayed teeth, or goiter backward in school or of lower intelligence quotients than those without such imperfections? The answer, gleaned from fifty painstaking studies, is yes. It must be borne in mind, however, that this answer is based on the average, for there are always those exceptions of a nearsighted child who leads his class or of a deaf adult who excels in his chosen field.

If the patient, at least a child patient, recovers, from such illnesses as measles, mumps, influenza and malaria there seems to be no deleterious influence on his mentality. There are certain bodily conditions, however, that are reflected in the working of the mind and that tell all too plainly that mind and body are one, for the present at least. A child born with a defective thyroid gland will turn out to be an imbecile unless he receives early and appropriate treatment. Also a person whose brain is damaged by a local infection, such as that of sleeping sickness, sometimes does not fully recover his previous mental powers.

The thyroid gland is some distance from the brain; but the hormone, or chemical messenger which it manufactures and which is so essential for thought, is whisked to the brain with every heart beat. Leaving out of account the results of damaged brains and damaged thyroids, can

it be concluded from these many studies that superiority of physique and relative perfection of organs is a cause of mental superiority? If one increases the height and weight of a person and fits him with glasses or removes his bad tonsils, will he exhibit greater intelligence? Quite probably such a child or such an adult will become somewhat more ambitious for mental or other work and will do what he now does more easily, but the quality of his intelligence will remain the same, for the organ by means of which mental activity is carried on has not been touched; the brain remains as before.

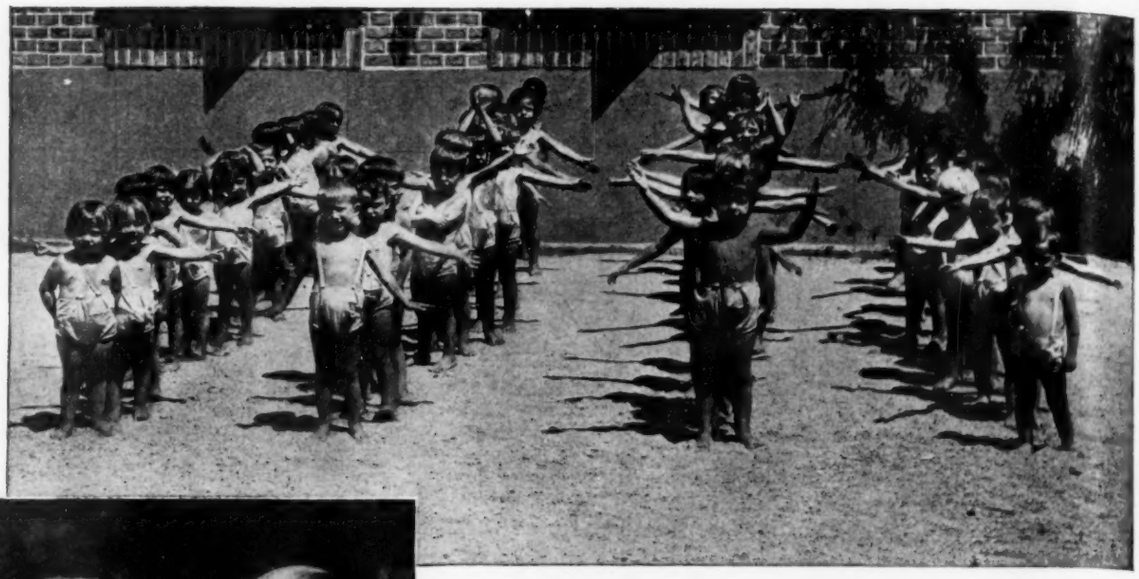
If a group of school children who are, on the average, physically and mentally superior to their fellows are studied as to their origin, it will be found that, on the average, they come from homes where there is more and better food, better air, more sunshine and more sources of interest than do their fellows. On the other hand, the children with smaller and more defective bodies come, on the average, from homes where the sanitation is relatively poor and where they receive inferior physical and mental attention. The inference is obvious that while by extracting or filling bad teeth, by removing adenoids and by improving feeding it is possible to prevent some ailments which might be consequent to such conditions and to improve a child so that he may work with more ease, nevertheless if one would add much to the child's mental stature or raise his school marks appreciably, one must begin with his parents and his early surroundings. His physical and mental inferiority is the product chiefly of heredity and of his manifold experiences from his beginning. If the child's thinking machine is to be enlarged, his parents or his surroundings in prenatal and preschool days, or perhaps both, must be improved, for he is comparatively old and fixed in his ways of mind and body by the time he enters school.

What of the children who are especially bright, those whose intelligence quotients range from 125 upward? If these children are compared with those whose intelligence quotients run from 75 downward, it will be found that, although 95 per cent of the children in the lower level have rotting teeth, about 90 per cent of the higher class also have them; although 7 per cent of the lower have adenoids, 5 per cent of the higher also have them; while 12 per cent of the lower have poor vision, 10 per cent of the latter have defective eyesight, and so it goes down the list. Evidently there is room, and plenty of it, for improvement in the physical condition of the upper class among scholars. If this were brought about by better care of the brighter child in his earliest months and years, would he be still more able mentally? If there is truth in the previous conclusion that those without imperfections are more intelligent, then this query would also seem to deserve an answer in the affirmative. At any rate, there is, both in mind and in body, vast room for improvement all along the line.

The assumption was made a few years ago by some students of such problems that delinquency and crime were the result, in many cases at least, of physical defectiveness. This explanation seems a good excuse, but when the delinquents are examined and statistical tools are used, it is found that they show, on the average, no more defects or diseases than do the normally behaved children of the same social grade; if anything, they would seem to be possessed of a little better physique. Other causes than poor vision or club feet will have to be sought for waywardness and viciousness. To quote Sir James Crichton-Browne, "Much vice, many mental disorders and diseases arise out of a deficiency of the psycho-vitamines of family affection, moral principles and religious beliefs." One is reminded of words from Chekhov's note-book: "Masticate your food properly their father told them, and they masticated properly and walked two hours every day and washed in cold water and yet they turned out unhappy and without talent."

Much is heard about mental hygiene as if this sort of hygiene were something more or less distinct from other hygiene, and there is evidence that this is the case. By heredity and early experience one acquires mental twists and turns comparable to, but quite distinct from, crossed eyes or bowlegs. Mind goes its own way, as body goes its own way, to near the limits of the tether that holds them together. The genius and the dunce, the criminal and the saint, are alike in that they must breathe and eat and sleep, and the "success" of each depends, to a degree, on his physique and physical perfection. After all is said and done, there remains at the bottom of the problem the brain and the more or less circumscribed trends in the working of the infinitely complicated mechanism of the brain as derived from heredity and early experience and example.

As might be expected, this matter of the relationship of mind and body is extremely confused. They are, and they are not, dependent on each other; they are, and they are not, independent of each other. Light issues from an electric bulb only when the dynamo with which the bulb is connected is working at a certain capacity and when the wiring is intact; the light reaches the full power permitted by its make-up only when the dynamo has attained much more than a minimum of generating power. However, the latter conditions being fulfilled at the power house, the possible amount of light given off from any bulb, together with its color, depends on the intrinsic nature of the bulb and its past experience of *(Continued on page 851)*

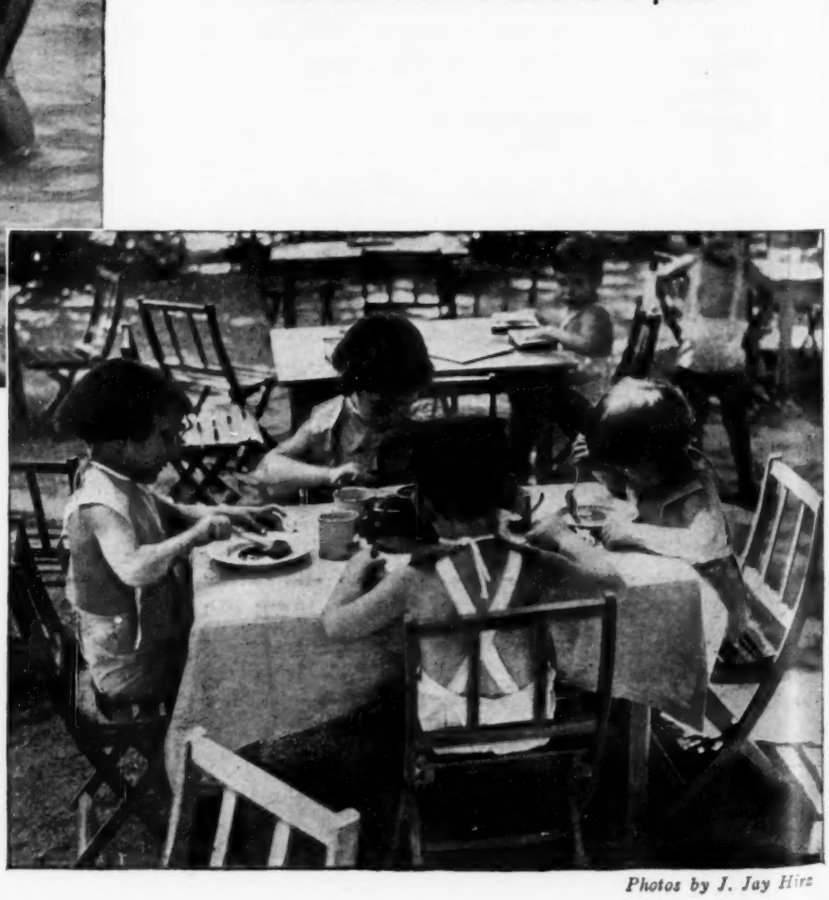


Two big factors in health are provided when all gymnasium exercises are held outdoors and in the sunshine.

The children amuse themselves with boats and pails in a pond, after which they take a sunbath on the sand.

A SUNNY SPANISH SCHOOL

in which working mothers of Madrid may leave their 2 to 4 year old children from 8 a.m. to 8 p.m.



Even meals are taken in the open air and the children, in groups of four, are taught table manners.

Photos by J. Jay Hirz

ROBERT H. BROTMAN Throws the Revealing Searchlight of Truth on—

DENTAL DENS

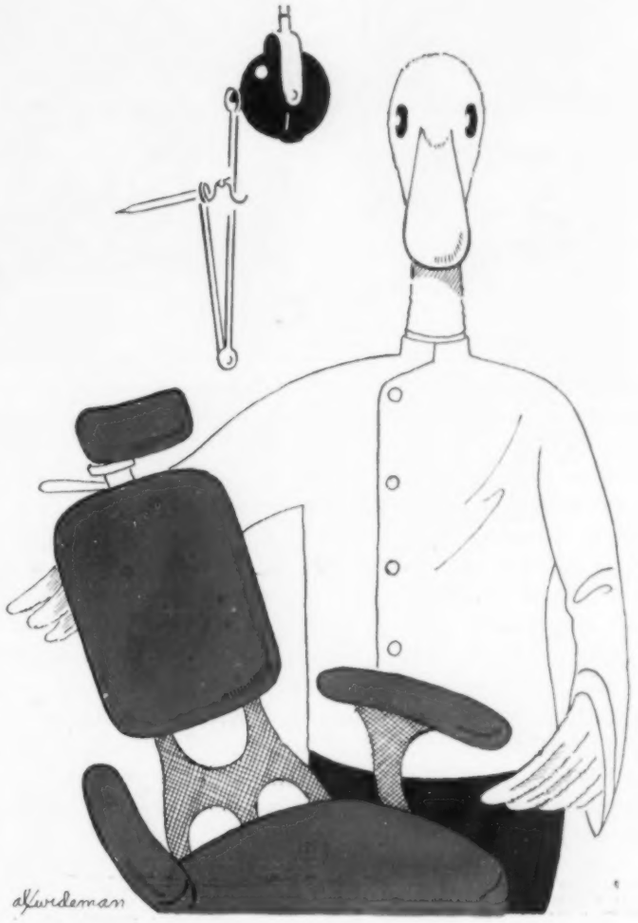
Part I

AS MIGHT be suspected, dental quackery has existed since ancient times. The first medical remedies for dental ailments were scientifically unsound, and many were extremely filthy and repulsive. For example, the following was an ancient remedy prescribed for halitosis:

When a woman's mouth smells, one burns separately the head of a hare and three mice; after having taken out the intestines of two of them (not, however, the liver and kidneys), one pounds in a stone mortar some marble or white stone, and passes it through a sieve; one then mixes equal parts of these ingredients and with this mixture one rubs the teeth and the interior of the mouth; afterward one rubs them again with greasy wool and one washes the mouth with water. . . .

In 1593 an interesting episode in the early history of dental quackery occurred. It was rumored throughout Germany that in Schweidnitz, Silesia, a gold tooth had erupted in the mouth of a 7 year old boy. A furor was created. Learned men engaged in lengthy discussions and controversies over the subject. Many were of the opinion that the incident indicated that the millenium was approaching, while others believed it to be a certain sign of catastrophe. People came from many countries to see the boy with the golden tooth. When any one who was unlearned paid a fee, the boy opened his mouth for inspection. When the occasion suited, the child became temperamental and refused to display the miracle. This action was excusable in that day, for he was no ordinary boy. A drunken nobleman once demanded to see the tooth. The lad refused to show it. The drunkard, in a fit of rage, wounded the child's mouth with a dagger. Surgical attention was required, and the deception was revealed; the tooth had an artificial gold covering.

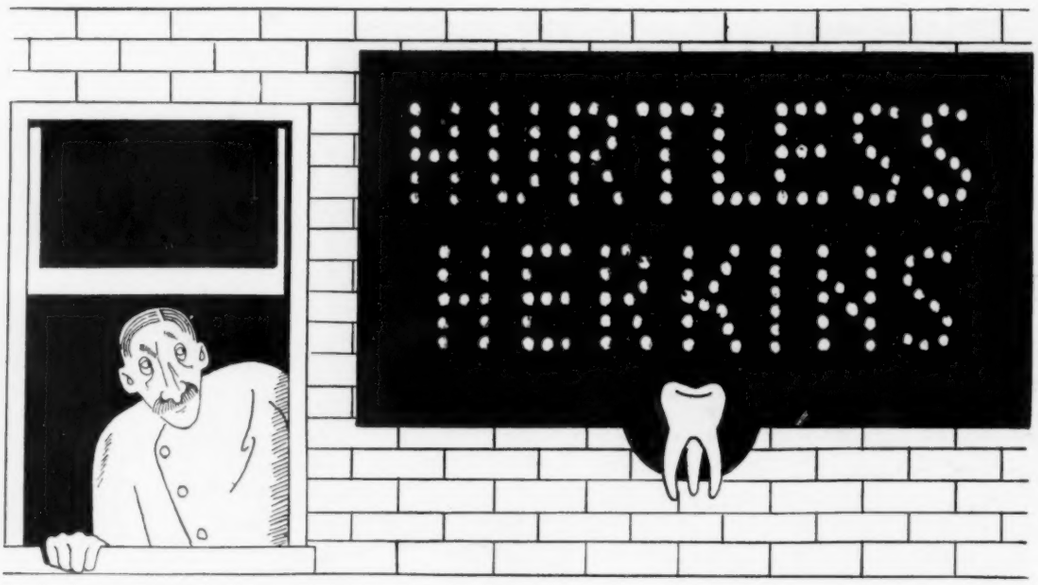
The itinerant dentist with his ballyhoo is still remembered by many. He traveled by horse and wagon from village to town to sell his services and wares. In order to gather a crowd, he would probably begin with an entertainment or a sideshow. He would then demonstrate his ability at pulling teeth by displaying a tremendous quantity of extracted teeth. He would seat an assistant or a cohort on the platform and appear actually to extract one of his molars. The patient would arise with a smile; and the fool who followed next in the chair and was hurt was ashamed to complain.



With the development of dental science, quackery has not been eliminated from the profession.

With the development of dental science, quackery has not been eliminated from the profession. Although it has assumed new disguises, it is perhaps more widespread today than in earlier periods. This is partly because of the fact that teeth involve esthetics, the most gullible field for the quack. Many charlatans prey on the public's vanity. When they use unscrupulous methods to obtain "suckers," they almost invariably succeed. The quack knows human nature and, like the faker who featured the boy with the golden tooth, he uses his knowledge for financial gain.

Laws are enacted in the attempt to rid the dental profession of quacks, but the quacks squirm into new channels and always border just beyond the reach of the law. For instance, if a law is passed prohibiting the advertising of "hurtless" dentistry, one of the quacks will immediately adopt the word "Hurtless" as his own name and have the fact recorded legally. From then on his name will be flaunted on huge illuminated signs "Hurtless Herkins"!



From then on his name will be flaunted on huge illuminated signs.

The dental quack seems to have drifted into advertising his wares for several reasons. The greatest asset to a dental practitioner is a satisfied patient, for that patient will sing the doctor's praises and will recommend him to others. By satisfying the second patient and the majority of those who follow, an endless chain is created. Time and perseverance establish a practice for the competent dentist, but because the dental quack does not render sufficiently satisfactory service, it becomes imperative for him to use advertising mediums to obtain new customers.

The charlatan's dental parlor does not depend on satisfied patients, although he does retain the good will of some. It is not always necessary to render honest and efficient dentistry to satisfy a patient, and many glorify dentists whose work is absolute quackery. The patient knows only that he wants to feel comfortable and spend little money. He does not know that a quack may have created foci of infection which may cause pyorrhea and may ruin health. Many patients carry disease and infected roots under bridges for years with perfect satisfaction and recommend that their friends get the same treatment!

Many of these quack dental establishments are links of a corporation chain having branches all over the country. The owners of such parlors may not be dentists; they may have absolutely no knowledge of dentistry. It is purely a business proposition with such proprietors. They are concerned only with profits, and the patient is merely a customer. Business men are not public beneficiaries, and it is not their object to safeguard the public's health.

Other dental despoilers own dental dens as individuals. They operate on a smaller scale, but their methods are the same as those employed by other "sharpers." Among these proprietors one may find not only the dregs of the dental profession but also laboratory technicians, former secretaries and keen business men who are completely foreign to the profession. It matters little, however, who owns these dental offices; in all of them dentistry is practiced not as a profession but as a business. As long as these offices hover on the brink of the law and engage in profiteering, honest services are not to be expected from them. For many years these dental deceivers have not been hindered greatly from promiscuously plying their plunder.

Of course these dens must employ dentists. Such dentists are usually obtained by inserting an advertisement in the help wanted section of the daily papers. Replies are plentiful. These applications are received from the four types of dentists who are usually to be found in the employ of dental sharks. One group includes men who have failed to establish a clientele for themselves for any of a number of unfavorable reasons. There is another class consisting of habitual drunkards. There are men who lack initiative. Finally, there are newly graduated dentists who do not have sufficient funds to set up a practice.

In order that the reader may be able to identify, and to avoid, the terrors of the dental den, I will recount a number of typical incidents that occur regularly in dental lairs.

Dr. Hurtless Herkins opened a dental den. Dr. Herkins had been practicing in a residential section in an apparently ethical manner for five years or more. He was an incompetent dentist; but he had a pleasing personality, and so for a while he was successful. Once a patient entered his office, a contract was made and the work was eventually completed. It was piecrust dentistry, however, and many unsatisfactory results appeared several years later. The consequence was that after about five years the dentist began to lose his patients rapidly

while only a few new ones appeared. Dr. Herkins' reputation traveled with him, and he failed also at two other locations. Finally he decided to open an advertising dental parlor.

Dr. Herkins made elaborate plans. He leased a second floor in the busiest part of the shopping district. He furnished his offices with elaborate but inadequate equipment. His sterilizer would have been large enough for the use of one operator, but three operators were to be employed. Patients would not know the difference, and so a dry sterilizer was not even considered. The costly x-ray machine was also overlooked. However, the reception room and the offices were attractive in spite of the fact that they were not properly equipped. The failure was prepared to become a success.

He was now ready to engage his employees and to advertise his wares. The three dentists employed were of the types previously described. The first was a recent graduate; the second had ten years of experience; the third had twelve, and Herkins had six. This totaled twenty-eight years and this fact was used in advertising as "twenty-eight years of experience!" The "nurse" in attendance had seen the inside of a hospital only when her tonsils were removed. She had previously been employed by a collection agency and was much prejudiced against credit.

Damage suits against quack dentists are common, and insurance costs for them are high, so an attempt was made to take care of the situation. The manufacturer of a mouth wash was brought into the game. Arrangements were made for the Herkins offices to prescribe "Flo-gin" as a mouth wash after every extraction. It was necessary to keep a duplicate of every prescription with the patient's name and address, for if any infection developed in any case in which "Flo-gin" was prescribed, the makers of that product would furnish attorneys for the portection of the quack and even be liable for a small amount.

When Dr. Hurtless Herkins was ready to open his den, he had a full page advertisement edited and composed to appear in the Sunday editions of the newspapers.

Hurtless Herkins and his profit mongers were now ready to entertain. Monday morning the doors were opened for business. Several customers were soon gathered in the reception room. They were attracted like bargain hunters to a sale. The advertisement was promising and alluring, and the statements were accepted as true. One cannot blame those who believe all that they read in the advertisements. One cannot blame those who gathered in Herkins' dental den.

The nurse in attendance ushered the first patient into Dr. Skinem's operating room. The patient happened to be a young factory girl, who complained of an aching tooth. Dr. Skinem's idea was that the best time to get money from a patient is when that patient is in misery. With a pleasant smile he proceeded to examine the poor girl's mouth, and his chatter was something like this:

"My dear girl, your mouth is in a horrible condition. You are a pretty girl, and it is a shame to have such neglected teeth. Your smile is ruined, and you are very fortunate that you came now. Your health may break down at any minute with such teeth. You need two teeth extracted, two bridges, a filling and two crowns. It will cost you $30 for the finest work, and you can pay for it on a weekly basis. Your mouth will then be in first class condition. How about making a deposit and allowing us to extract that painful tooth for you right now? It won't hurt you."

"I only have $7 I earned last week, Doctor," replied the patient. "Are you sure you won't hurt me in taking out my tooth?"

"We will take the finest care of you, miss. You can just pay that $7, and we'll begin work at once."

The money was paid. Dr. Souse was called in and instructed to extract the bad tooth.

There is a science and an art in making contracts and obtaining deposits, and this was Dr. Skinem's specialty. He knew little about dentistry, but he was employed because he could extract money better than teeth. Many of the quack offices have their Dr. Skinem. Without such an individual, progress could not be made. Although these parlors advertise "honest dentistry," their contract specialists do not know enough about dentistry to be honest even if they desired to be.

[NOTE.—In the October HYGEIA, Dr. Brotman will present Part II of "Dental Dens."]

He could extract money better than teeth.

The SCHOOL and TUBERCULOSIS

IN CONSIDERING the status of tuberculosis as it affects school children, it must be recognized that large gaps exist in the present knowledge of the disease. In its variety of symptoms and its tendencies to periods of latency and retrogression, the clinical evidences of the healing or the spreading of the disease are meager and do not direct attention to factors that cause changes in the deep-seated lesions.

Continuous progress is evidenced in the lessening of tuberculosis. The morbidity and the mortality have declined, as has also the amount of infection shown in the reactions to tuberculin. It is therefore a winning battle, and is surprising, one might say, even to the experienced worker who visions the many probable avenues for the spread of the disease.

Childhood tuberculosis is an involvement most often noted in childhood or adolescence; it usually exhibits a pulmonary deposit or focus, and secondary processes in the enlargement and inflammation of nearby lymph nodes, commonly at the root of the lung. Although some authorities disagree, it is generally regarded as a primary focus of a pathologic condition following soon after the initial infection of the individual.

The focus usually heals promptly or may progress for a time and then retrogress with a healing and calcification. The area may be entirely absorbed and show no x-ray evidence of its former site.

In occasional cases the lesion progresses rapidly to varying extents and may give rise to miliary tuberculosis, tuberculous meningitis or localized lesions in other parts of the body. Some patients with active tuberculosis show clinical manifestations, while in others the disease spreads to new areas without any recognizable early symptoms. The childhood type of tuberculous infiltration may occur in adults; when it does, it is regarded as evidence that the person escaped infection during childhood. The adult type of tuberculosis may be the sequel to the childhood type, or the natural course of the disease. After an initial or a primary lesion of the so-called childhood type, the normal trend of the disease may involve the development of characteristics of the adult type.

In considering the function of the school in the control of tuberculosis, one is faced with a many-sided problem, with the main encouragement to be derived from the fact that each year shows substantial gains in its control.

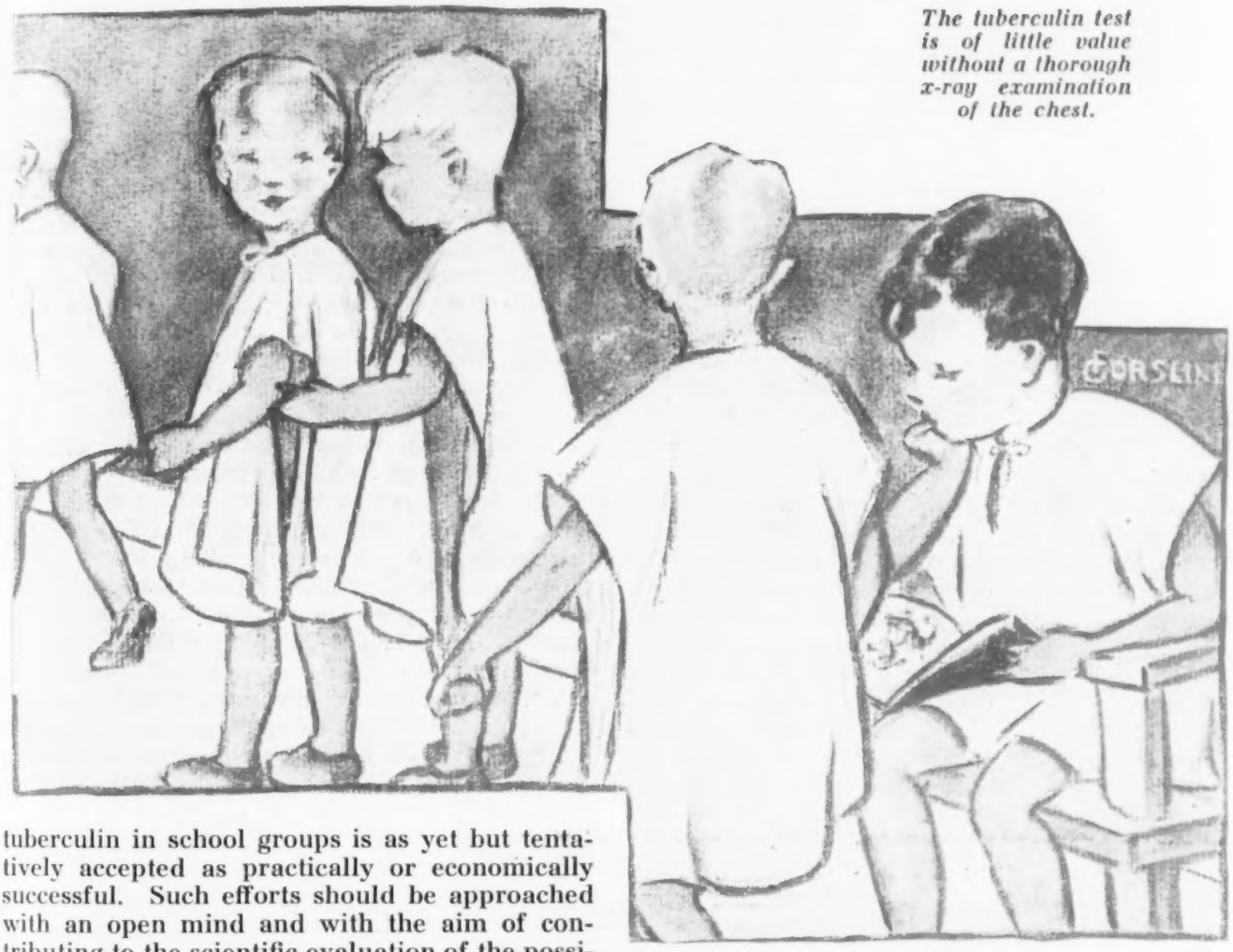
From the public health aspect the school program is distinctly secondary to the effort to control active tuberculosis in the general population. The periodic examination of the contacts of known active cases is much more productive of results in controlling the disease than the school study of all pupils. No special study of tuberculosis in the schools is warranted unless a good program based on these two more important phases has had consistent promotion.

The school physician might detect a few active cases in children, if conditions allow careful auscultation of the chest and a careful history of symptoms and the history of exposure to the infection. However, many children with demonstrable disease may be missed, for at the time they may be negative to auscultation and give a negative history.

Conservatism should rigidly control the diagnosis in school children, for the label "tuberculosis" can well be an extreme handicap mentally, while its threat to the physical health may have been remote.

During the early years after von Pirquet's discovery of the tuberculin test, the reaction was found to be positive in from 85 to 95 per cent of the cases observed, and for this reason the test was not regarded as conveying any additional information to help the fight. Now, however, with the positive reactors comprising from only 5 to 35 per cent of the grade school children tested, the information disclosed enables the program to be centered in the small group infected. The utility of mass studies with

By *William Paul Brown*



The tuberculin test is of little value without a thorough x-ray examination of the chest.

tuberculin in school groups is as yet but tentatively accepted as practically or economically successful. Such efforts should be approached with an open mind and with the aim of contributing to the scientific evaluation of the possibilities of such studies. However, no harm results from the widespread use of tuberculin tests and the subsequent use of the x-rays. Certainly, if the child exhibits a positive reaction, this information can be utilized to stimulate the parent to revise the child's rest schedule, to correct the defects and to amplify the dietary. Frequently, errors in parental control which persisted in the management of the apparently healthy child have been corrected when a positive tuberculin test showed that the child was potentially tuberculous. Long before symptoms of the disease would be detected, the test presents a forceful argument for better teeth, more rest, regular meals and a varied dietary.

Intradermal tuberculin tests are of especial value for the child in the first grade. Although it is a common practice to test members of the graduating classes of high schools, a better plan is the annual testing of pupils in the first grade, the seventh grade and the eleventh grade. In small schools it is often best to plan to have the entire student group tested at intervals of four years. The tuberculin test is of little or no value without a thorough x-ray examination of the chest in each positive reactor. The initiation of such a service in the schools must be recognized as a purely diagnostic effort; it is designed to detect any incipient pathologic condition which may be present and which is then referred to the family physician for treatment. It is a confidential medical examination, always maintaining for the pupil his proper status with his own physician. When it is organized in such a spirit of team-work with the medical profession, it merits official approval such as has been accorded by the public relations committee of the medical society of the state of New York.

This program is usually undertaken jointly by the school physician and the staff of the county sanatorium. Frequently the school physician assists the sanatorium staff in giving the tuberculin tests. The x-ray pictures are secured by moving a portable machine to the school or by taking the positive reactors to the sanatorium in regularly scheduled groups.

The written permission of the parent is a prerequisite. The x-ray examinations of the positive reactors are supplemented by a close study of the history of environment and symptoms. The x-rays also utilized in cases of children with questionable symptoms who had refused the tuberculin test. Also, it is advisable to use the x-rays in the cases of any negative reactors who reveal questionable indications.

The tuberculin test is reputed to be 97 per cent accurate. The prognosis in the infected children is also optimistic. In 1908, when the population was reputed to be almost 90 per cent infected as shown in von Pirquet tests, the deaths from tuberculosis constituted 14 per cent of the total deaths. In the present decade, with about 50 per cent of the population showing infection, the deaths from tuberculosis constitute only 5.5 per cent of the total deaths. Can we not look for a continuation of the influence of the factors that have achieved this result? Can we not also aim to assist further this downward trend?

The interpretation of the reactions, the accurate dilutions of the tuberculin, the optimum technic in making the x-ray examination of the lungs and the interpretation of the x-ray pictures are all usually too expensive and too complicated for use by the family physician. He will find it awkward to attempt to carry on such a diagnostic study in the children of his practice. Furthermore, he would have to turn to salesmanship to persuade the parents to request the tests. In the schools, the mass psychology enables a more complete and rapid accomplishment.

In the examination of school children, the discovery of 1 per cent with demonstrable tuberculosis is average; the figure varies, and from 0.2 up to 3 per cent may be reported. The treatment is not in the province of the school, but the school has a duty to the child to check on the progress of treatment and to assist in promoting the home survey to curtail further infection.

It is inadvisable to send a report to the parent, but a full report should be sent promptly to the family physician. A notice instructs the parent to consult this physician. Curiosity as to the result of the test acts in stimulating the parent to make this visit to the physician.

In no area is it advisable to conduct such supplementary studies in the schools unless the medical profession of the locality has been made thoroughly cognizant of the extent and purposes of the diagnostic service and has been convinced of its ethical background and public health benefits.

A most important objective is found in the results of the x-ray examination and in the diagnostic observation of the members of the household in which there is a child who shows a positive reaction. Since the school is unable to include these persons in its diagnostic service, observation of them is the logical function of the family physician and the health officer aided by the public health nurse and the school nurse. Sanatorium facilities may be available through the family physician.

It is within the scope of the school's duties to the child to exert its influence in obtaining this study of the household, thereby bettering the child's home environment and ensuring that further tuberculous infection of the child is prevented. Reports of such epidemiologic efforts show a wide variation in results. Studies made in Rockland County, N. Y., are significant in showing that in fifty-three households composed of 108 persons, there was a total of six active, unsuspected tuberculosis cases; and in Cattaraugus County, N. Y., in a series of eighty households no active cases were discovered. Plainly there is a need in this field for prolonged and intensive study of the economic factor and the relative importance of this method of tracing the source of the child's infection.

One must not lose sight of the prime importance of public health control of active cases of tuberculosis. A consistent program for reexamination of contact children should be a fixture. Granting the presence of these two aspects of control, there is also a profitable field in the health official's action concerning tuberculous infection in school children. Whether tuberculosis of the childhood type is a distinct pathologic entity with a benign course or whether it is actually the initial stage of a condition which, in a small proportion of children, eventually leads to the adult type of tuberculosis would seem not to affect the benefits derived from public health control. Among these benefits are:

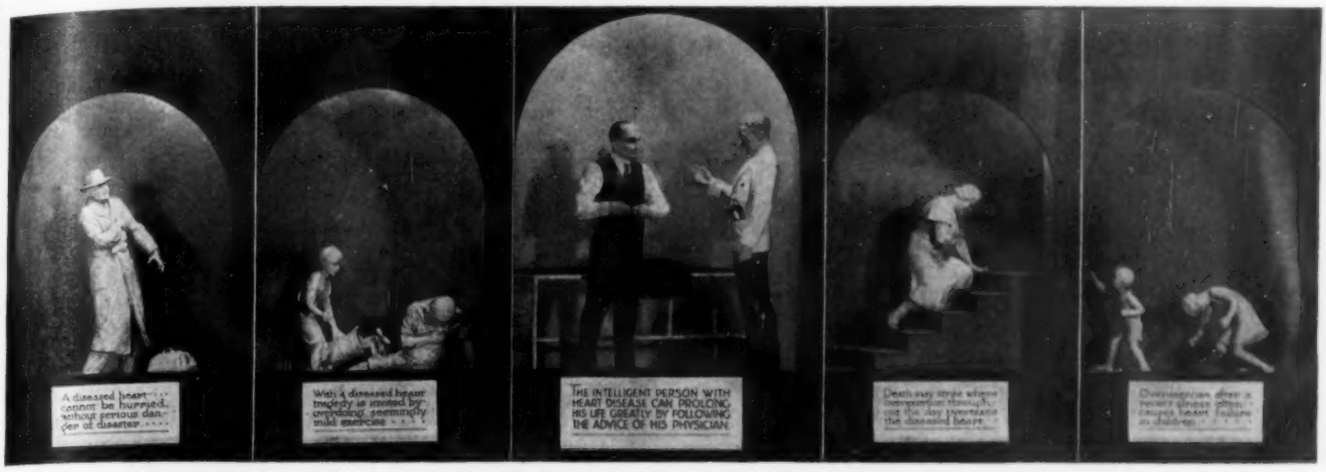
1. An appreciable number of children are found in need of treatment, and adults with active tuberculosis are discovered by the follow-up program.

2. Families who are not utilizing regular medical supervision and guidance are given occasion to choose a physician for this preventive service.

3. Physicians are aided in increasing their function in preventive medicine through the reference to them of such considerable groups of children who are apparently well but who give a positive reaction to the tuberculin test.

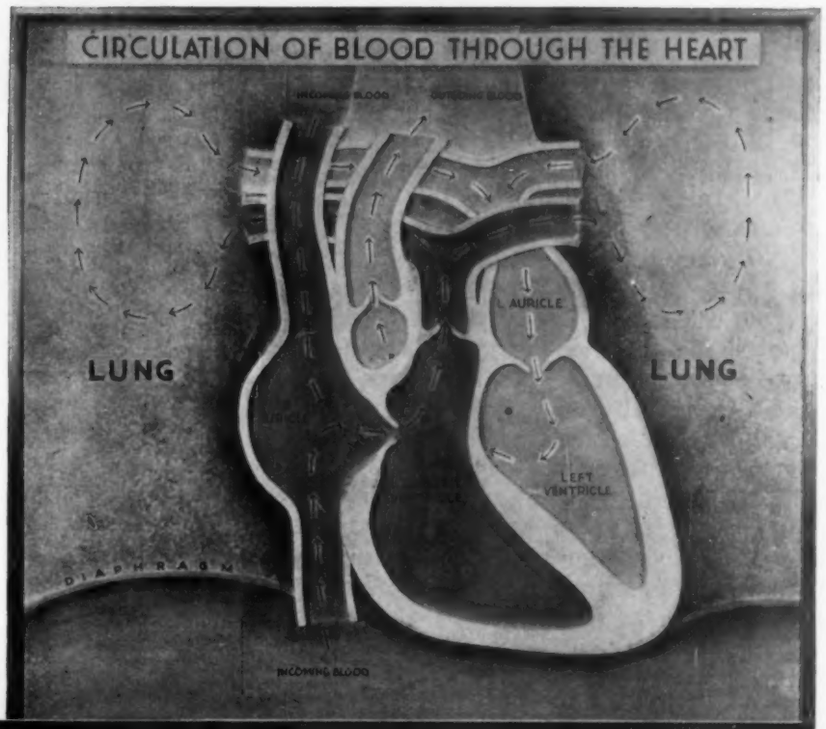
4. Diagnostic service of a high quality is accomplished through the local sanatorium staff and is immediately made available to the family physician who is actually supervising the patient.

5. Children, apparently well, whose parents have taken meager steps to correct overfatigue, dietary errors, neglected teeth and other defects, have herein a rather spectacular reason for correcting these general health hazards before symptoms of tuberculosis have brought a belated warning.



The group of dioramas above is taken from the exhibit of the University of Illinois College of Medicine at A Century of Progress. It shows how persons with bad hearts may, and do, suffer collapse and death by neglecting proper hygiene and care. The central figure shows how proper care and living, under the doctor's direction, will prolong life.

The diagram to the right is from the same exhibit.



Other dioramas show how the Illinois state department of public health would improve industrial hygiene in five fields of industrial occupation where hazards obtain. They are the machine shop, where there is danger of coniosis, or dust disease of lungs; the butcher shop with its possible peril of tularemia; general sanitary conditions surrounding the worker; painting, in which there may be risk of plumbism, or lead poisoning, and the garage with its menace of carbon monoxide.

Waging War on "Polio"

By STELLA RANDOLPH

IF, AS can be said with honesty, the germ of infantile paralysis, or "polio," is an insidious little villain who strikes in the dark, excuse may be found for his fighting methods when we view, or try to view, his size. In fact, he is so small that no one is sure of having captured him yet. He has been sneaking in and out of the laboratories of the world, going through filters especially prepared to trap him, and giving doctors the laugh by doing most of the things they have predicted he would not do. So many research men have given chase by now that if the battle finally brings the little enemy into the open, he will surely be short lived.

An attack is indicated by symptoms not uncommon to minor childhood indispositions, such as headache, fever, vomiting, sore throat and general discomfort. Fever seldom goes beyond a temperature of 103 F. Daily temperature taking during the months when infantile paralysis is usually most prevalent is a wise precaution. Any indication of fever means that the child should be watched for any other questionable symptoms. Parents who fear that they may arouse undue concern on the part of the child regarding his health may be reassured when they consider children in nursery schools where temperature taking is a part of the daily routine. It is possible to manage it without arousing any more concern than handwashing will, if the attitude of the parents does not betray their own fears and doubts.

The months of greatest danger seem to be June, July and August, although the disease is no scorner of the colder months, and in some places the periods of greatest prevalence have been reported as September, October and November, with a gradual decrease through the other winter months.

As a rule the earliest days of the disease are the most dangerous. Definite paralysis does not occur at once, for this takes place only when the germ attacks certain cells in the gray matter of the spinal cord. The cells involved are those concerned with the nutrition and function of the voluntary muscles, the skeletal muscles of the body. However, since paralysis may occur in from two to nine days after the onset of the disease, any action taken to prevent it must be prompt.

If the doctor thinks there is real danger that the child's illness is infantile paralysis, a test of the spinal fluid is a fairly conclusive proof. If there is much more of the spinal fluid than is common and if it contains more protein than is normal and more cells than it should, particularly, as the microscope will reveal, more of a single nucleus, then the doctor will probably inject serum to prevent the disease from making further headway.

Serum may be injected either into the spine or into the veins. The first serum used came from persons who had recovered from the disease, but so widespread have the epidemics become that not enough could be provided from this source. Experiments with the horse, that good friend to mankind that has furnished many other serums, have been of no avail for infantile paralysis serum. Only the monkey has responded favorably so far.

Acme

Only the monkey has responded favorably in furnishing infantile paralysis serum.

Any person with a questionable case should be isolated at once. Discharges from the patient's body, secretions from the nose and throat, are most likely to transmit the disease. Adults and children who may have come in contact with the patient should be quarantined at least until after being disinfected, and many doctors prefer to have a three week period elapse before the patients again mingle with others. For it has been learned that adults may carry germs of the disease about with them, ready to be passed on to others, without being attacked themselves.

One point that has not yet been definitely established is why there should be an epidemic in one section of the country while none is noticed in another. One possible explanation is that where a recurrence of the disease is noticed yearly in one locality, there are fewer children to succumb to it the following year; while in sections where the germ has not been active for several years, an "epidemic" suddenly occurs simply because there are more available victims.

Another theory is that many persons have a slight attack of the disease without ever realizing it. Some of the results of study convince doctors that cases often show spontaneous recovery and, as is well known, no one who has had the disease is susceptible to it again. So it may be that sections of the country in which no epidemics appear to have occurred have been those where the disease was not severe enough to be positively diagnosed. Belief in this theory has led some doctors to use the blood of apparently normal parents as protective serum for their children, and the results do not entirely discredit this confidence.

When crippling has occurred, there may still be hope for the patient to regain partial use of the muscles affected. Everything depends on whether or not the affected cells in the spinal cord have been entirely destroyed. If they have, they cannot be replaced; but if they have been only partially injured, careful and prolonged treatment will do much to restore a part of their function. To any parent this prospect is assuredly not a happy one. Instead of vain regrets he would rather maintain the daily vigilance and prompt action required to follow up questionable symptoms; and he will not wait for an epidemic before he does this. Thus will he not only protect his own children but also help to win the war that medical men are waging so valiantly against epidemics of infantile paralysis.

Helping the Stuttering Child

(*Continued from page 793*)

The third thing to watch is the child's emotions. Violent fears, temper tantrums and other upsetting emotional experiences are to be avoided. They have a profound effect on the child's bodily condition, interfering with digestion, normal heart action and general development. This is all reflected in the child's speech. Emotional outbursts are rare in children whose parents are reasonable, considerate and patient. There is no antidote for emotion like straight thinking. Teach the stuttering child to face situations squarely and frankly, to think about them, and to analyze them rather than to regret or to fear them. As a result the child will be more calm, have more poise and consequently have more control over his speech.

The fourth thing to take into account is the child's school life. This presents many grave problems for him, among which oral work and school programs are important. Parents should talk frankly with the school teachers. In this way both the parents and the teachers can get a better understanding of the stuttering child. In most cases it is perhaps best if the stuttering child is not called on for oral work unless he volunteers to recite. If this plan is adopted, it should be thoroughly explained to the child so that he will know just what to expect. It may be wise to have him do extra written work if he is excused from the recitations.

As a fifth measure, help the stuttering child to develop his natural talents. This will give a greater means of self expression and make up tremendously for the restraint caused by the speech defect. It will also help him to win the respect of his playmates. It will counteract any tendency he may have to feel inferior because of his stuttering. And last, but especially important to a stutterer, it may lead to a worthwhile occupation, even to a life work.

The sixth thing to consider is the child's attitude toward his stuttering. A frank, candid attitude is by far the best. The child should never be encouraged to feel that stuttering is something to be ashamed of, something to hide from others. It is much better that he should stutter freely, accepting it as the natural way for his particular speech mechanism to function. If he does not mind his stuttering, almost nobody else will. By all means, never apologize to any one for the child's stuttering, never say or do anything that might lead the child to think that his speech disorder is undesirable. Not that stuttering is to be accepted with indifference. It should be *(Continued on page 812)*

Teaching Your Child to Be Safe

By
CURTIS BILLINGS

Practice crossing the street with him from the time he is two until he is old enough to go to school.

THE PROBLEM of protecting her child from the manifold dangers of the world today is one of the most baffling of all the problems which beset the modern mother. Indeed, the great interrogation of parenthood in the United States might well be: How can I keep my child safe? Children today face most of the long established dangers such as fire, poisons, scalding water, toxic gases, slippery floors and stairs, sharp objects and cutting tools, and in addition nearly 25 million automobiles waylay them on streets and highways.

Probably there never has been a more hazardous age for children. It is certain that our improved system for recording accidents makes us more aware than ever before of their appalling extent and tragic nature.

"I realize all this," protests the worried mother. "I accept the responsibility for protecting my children. But tell me how I am to proceed."

Here, alas, the already perplexed parent is likely to become even more confounded. For, on making these inquiries, she discovers that the necessary basic researches into the causes of and cures for child accidents have not yet been made. Thus, when one mother asked, "What shall I do with my 3 year old boy who has found an exciting game in hanging by his hands from the third-story window sill?" she discovered that no controlled experiments had been made for such a delicate situation.

Happily, however, the perplexed parent does not leave the interview empty handed. The child specialist can give her advice which, although perhaps not scientific, is based on a broad experience.

All persons who have studied child safety are agreed on certain fundamentals. The first is that the environment plays an important part in the safety of children. At once one calls to mind the many common dangers about the house; usually these can be remedied only by the mother. Cleanliness and order must not be her sole domestic ideals. To have a safe home is at least as important as to have a clean home.

The kitchen, for example, is immaculate; but are matches within the reach of baby hands? The pans on the stove are scoured bright; but do the handles stick out over the edge tempting the child to grasp them? The medicine chest is orderly; but are poisons to be found there? The living room is neat, airy and clean; but in the waste paper basket are there a few pins and discarded razor blades for the creeping child to find?

These are but a few of the hazards that take an awful toll among children each year. There is nothing to indicate that children are safer in the homes of the wealthy than they are in the homes of the poor. The only difference is in the different kinds of hazards that are found. For the most part, the safety of the house depends on the mother, in whose power it is to make almost any home comparatively safe or unsafe.

The second fundamental generally agreed to is that safe habits must be painstakingly taught to children. Dr. Ada Hart Arlitt of the University of Cincinnati recently said:

> I submit that training in safety is exactly the same sort of training, as an educative process, as training in the English language, or training in politeness, or training in any other thing which one wishes a child to know.

Dr. Arlitt outlined in a paragraph a method for teaching a child how to cross the street safely:

> Take the child with you when he is about two and can walk, and show him how you cross—and be mighty sure you do it correctly yourself. Soon you can let him look all ways at the intersection for coming automobiles and soon he will be able to give you the signal to start when a safe interval in traffic occurs, or when the green light flashes, or when a policeman beckons. And all the time you are there to check him and to take the responsibility for his acts and to correct him. Having practiced with him from the time he is two until he is old enough to go to school, finally letting him cross while you stand on the curb watching; you will discover that your child is so thoroughly trained that it would be difficult for him to cross in an unsafe manner.

How many parents take such care in the training of their children? Indeed, school teachers frequently complain that although the child may learn safe habits of crossing the street at school, he "unlearns" them on the Saturday shopping trip with his mother when he observes that she heedlessly jay-walks, disregards signals and breaks other traffic rules.

A housewife in a small, midwestern town was distressed by the dangerous pranks of her spirited 4 year old daughter who took particular delight in turning the petcocks on the new gas range. "I'm playing a tune," she explained when her mother first caught her at it. "But I like the smell!" she insisted another time.

The distraught mother experimented with all the time honored stratagems but to no avail. Locking the kitchen door or eliminating the stove was out of the question. She hesitated to invoke fear as a deterrent because she did not want her daughter to grow up to be afraid of a stove. Only one choice was left to her, and it was fortunately the best.

"All right, Mary. You are now old enough to learn how to light the stove just as Mother does," she informed her surprised daughter. "This is the way to do it correctly. First light the match like this, then hold the match over the correct burner, and then turn the petcock. Now, you try it."

Mary was flattered by this mark of trust and was enthusiastic over the "grown-up" game. Every time her mother wanted to use the stove, Mary was on hand to light it. The novelty, however, was soon gone, and what had been a game became a duty. Not infrequently her mother called her indoors from play to light the stove. Frequently the child attempted to beg off, but for several days her mother insisted. At last Mary told her mother that she did not like to light the stove or turn the petcocks any more, and she was excused from further service.

Thus, by systematic instruction, a real hazard not only to Mary but to this whole household was obviated. Mary's dangerous curiosity was satisfied; she was unafraid of the most important piece of equipment in the house, and she was schooled to light the burners safely.

It is thus clear that safety must be taught to children. Safe habits cannot be instilled in them by intermittent and impatient scoldings and cross "don'ts," nor are threats of disaster effective in preventing mishaps to children.

This brings up another principle on which child specialists agree. It is that inculcating fear in children will not safeguard them. Dr. Arlitt condemns the practice of making children afraid of street traffic as a means of protecting them. She reports the following incident:

"All right, Mary. You are now old enough to learn how to light the stove just as Mother does."

One mother came to me, and complained that she couldn't get her child to cross the street without an upset. He cried, and she had to drag him across. It was very dangerous for him, she said. We asked her what her first approach was to getting him to cross the street safely. "He is my only child," she explained, "and I took him to a corner where an automobile had run over a cat. John, I said, look at that cat. If an automobile catches up with you, that is how you will look."

Grace Abbott of the U. S. Children's Bureau recently deplored the "affectionate anxiety of parents which leads them to adopt fear and repression as a means of accident prevention." She declared that children are not protected by their fears. The teacher knows that wisdom rather than fear should be the basis of a training program.

Ethel Kawin of the Illinois Institute for Juvenile Research, while granting that the principle of bringing up children entirely without fear has many wholesome aspects, warns that the child who survives is the child who fears wisely. Thus fear becomes a broader term and is synonymous with caution. "Children must be taught what is dangerous," she says. "One cannot let a child fall three stories because one does not want him to be afraid." Caution and a knowledge of doing things the right and safe way is the goal of safety education.

The encouraging thing to the mother who is anxious about the safety of her children is that accidents can be prevented. In this part of her job of child rearing she is not so much at the mercy of the place where she lives as she is in the case of communicable diseases, for example.

During the ten year period ending in 1932, child deaths by all types of accidents decreased 19 per cent, while accidental deaths to adults increased 28 per cent. During the six years since 1927, when automobile accidents to adults increased 32 per cent, accidents on our streets and highways to children were reduced 24 per cent. This is heartening evidence of the effectiveness of the educational work going on in progressive homes and schools.

Even so, the unnecessary deaths of 15,000 children, the toll for 1932, present a ghastly indictment of the training of our young. It is a tragic challenge to parents and especially to mothers.

Helping the Stuttering Child

(*Continued from page 809*)

cured; but while it exists, it should be accepted in a matter of fact way and should not be allowed to interfere with the child's mental and emotional development.

The seventh and the last point that I shall discuss is that of helping the child to form the best speech habits of which he is capable. You cannot expect perfection from a stuttering child, but you can probably expect better speech than he usually reveals. The effort and the straining that go with his stuttering are largely habit with the exception of muscle spasm. That is not habit or anything that he can prevent until his speech mechanism has been made more stable. The effort to force out a word is quite unnecessary, and the fear of stuttering is uncalled for. In brief, the effort to avoid stuttering before it actually occurs and the effort to end stuttering as quickly as possible when it has occurred are both bad habits which aggravate the condition.

The child should talk with no more effort than is used by a normal speaker. He should also stutter with no more effort than that. If he does, his stuttering will sound loose, as in "buh-buh-buh-boy." This is extremely desirable for it not only eliminates much of the strain, fatigue and feeling of helplessness, but it also keeps the speech muscles at more nearly their normal condition so that stuttering is less likely to occur often. If he is going to avoid making his usual panicky effort when stuttering occurs, the stutterer must learn to "keep his head" and remember not to force his speech. It is possible for him to learn all this and to practice it, and his speech will be benefited accordingly.

Any intelligent parent can follow these seven recommendations up to a certain point. When that point is reached, when the parent feels that he has done all that he can do, he should consult a competent speech pathologist. Stuttering is serious. It is one of the severest and unfortunately one of the commonest handicaps. Because modern science has been brought to the problem of stuttering, the nature and the causes of this disorder and the ways of treating it are understood better today than ever before. This knowledge is improving day by day as the laboratory workers continue to test, to measure and to experiment. This knowledge is being spread so that it is benefiting more and more of the million stutterers in this country. Competent specialists are also becoming more numerous.

Parents of stuttering children should remember the seven points to be considered in dealing with stuttering. They are the use of the hands, health, emotions, school problems, development of natural talents, attitude toward stuttering and the elimination of effort and strain from the child's speech. Much can be done along these lines even in the home, and help should be given as early in the child's life as possible.

Common Sense in Mouth Care

The seal signifies that the composition of the product has been submitted to the Council and that the claims have been found acceptable to the Council.

By W. M. Gardner

INTRODUCTION

EFFICIENT ways and means by which every person can play an active and a necessary part in the prevention of dental disease have in the past received too little attention. True, the public has been advised and exhorted to use a tooth-brush, but sufficient instruction in the correct use of the tooth-brush has not been given.

Most articles in current literature stress the importance of mouth hygiene by pointing out the unfavorable conditions that may arise both in the oral cavity and in the general system because of neglect. Their authors spend little or no time on the various factors that aid in bringing about intelligent care of the mouth and the proper brushing of the teeth. They assume that thorough and efficient brushing is an easy thing, that only the willingness of the patient is necessary. A careful analysis of mouth hygiene habits, however, proves that this assumption is incorrect.

A recent routine examination of 1,000 persons showed that 95 per cent had unhealthy gums, ranging from a mild inflammation of the gum tissue with only slight, occasional bleeding to a pyorrhea so marked that the removal of all teeth was advisable. The group examined was adjudged to be above the average in neatness and intelligence because it included many professional men, nurses and school teachers. About 98 per cent of those examined gave a history of having used a tooth-brush at least once a day, usually in conjunction with a dentifrice and a mouth wash.

The obvious conclusion from these statistics would be that the tooth-brush had failed miserably in its rôle as the guardian of gum tissue. Careful inquiry into the mouth hygiene habits of each individual, however, led to an entirely different conclusion. It was found that:

1. Most persons have no accurate knowledge of the problem they are trying to solve.
2. The value of tooth-pastes, tooth-powders and mouth washes is grossly overestimated.
3. The time spent in brushing the teeth is too short.
4. Most tooth-brushes on the market are ill shaped and too large for effective brushing.
5. Popular methods of brushing neither clean the teeth nor correctly stimulate the gum tissue.

The study also brought out the fact that the majority of patients knew the necessity of a clean mouth for good teeth and good health. They knew the wisdom of prevention, yet they could not or did not work out for themselves an effective means of bringing it about. What little knowledge of mouth hygiene they had was gleaned principally from advertisements of dentifrices, mouth washes and tooth-brushes. Advertisements naturally present the advantages of certain products and are sometimes extremely misleading as far as the whole scientific truth is concerned.

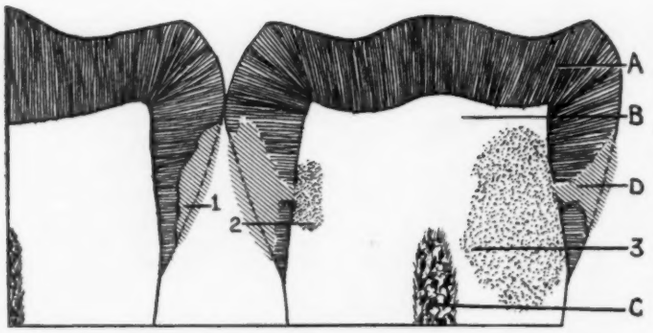
I. THE PROBLEM

DESTRUCTIVE forces which bring about loss of teeth may be divided into two classes. The first class acts on the tooth itself and is known as dental decay or caries. The second class destroys the gums and bone, the structures that support the teeth, and is known as pyorrhea, or periodontoclasia. It may be well to see how these destructive forces work so that they can be more intelligently and successfully combated.

Practically all exposed surfaces of the teeth which are not subjected to the friction of foods during mastication are covered with a gluelike, viscous substance derived from the saliva. This substance is called mucin. It is invisible to the eye, tenaciously adhesive, and insoluble in saliva or fluids that can be tolerated in the mouth.

In this mucin are incorporated tiny particles of fermentable foods, principally sugars and starches, and bacteria. The sugars and starches are broken down by bacterial action until lactic acid is formed. This acid is produced slowly, and it is only after weeks or months of undisturbed manufacture that it reaches a concentration high enough actually to dissolve tooth structure and start the process of decay.

These little lactic acid factories, as some one aptly called them, are necessarily set up in those places where the mastication of food and tooth



Section of adjoining teeth showing three stages of decay between the teeth, where "acid factories" have been set up: A, enamel; B, dentine; C, nerve or pulp; D, acid factory. In the first stage the enamel has not been completely penetrated. In the second stage the enamel is completely penetrated and the dentine has become involved. In the third stage there is extensive involvement of the dentine until the nerve is almost exposed.

brushing will not disturb them. Only that part of the tooth to which the little lactic acid factory adheres is subject to decay.

In the immediate process of decay, then, there are at least three necessary factors: acid-forming bacteria, easily fermentable foods and a locality sheltered enough for a sufficient length of time to form lactic acid of a concentration high enough to attack tooth structure. The solution of the problem of the prevention of decay hinges on the successful elimination of one of these three factors.

It is generally conceded by those who have concerned themselves with the problem that complete elimination of bacteria from the mouth for an appreciable length of time is impossible. The elimination of sugars and starches from the American diet is not only impracticable but impossible and undesirable.

The problem to be solved by the tooth-brush is clear. The little lactic acid factories must be mechanically disturbed by the tooth-brush so that the acid formed can be diluted or neutralized by the saliva and thus never reach a concentration high enough to attack the tooth. An analysis of the popular methods of brushing shows, unfortunately, that the areas in which these acid factories are set up are never really reached by the brush. Popular methods of brushing, therefore, have been of little value in the prevention of decay.

There are, of course, other underlying forces in the mouth which are destructive to tooth structure, but there is enough evidence at hand to prove that the action of acid-producing bacteria on sugars, starches and other fermentable foods is by far the most common one. So much for the destructive forces that work on the tooth itself.

Anything that is a constant source of irritation to gum tissue or that impairs active circulation of the blood initiates and promotes a breaking down of the gum and bone tissue supporting the teeth.

The most common source of irritation to the gum tissue is salivary deposit, or tartar. This tartar is composed chiefly of salts derived from saliva and deposited on teeth where it undergoes a process of hardening. For at least forty-eight hours, however, the deposits remain soft enough to be easily removed by a brush. Later, steel instruments are necessary in their removal.

These deposits of tartar forming at and a little beneath the gum tissue are usually responsible for the beginning of gum tissue disease. They are foreign bodies to the gum tissue and may be likened to a sliver in a finger. Their constant irritation keeps little gum tissue lesions open, thereby admitting the bacteria of the mouth to further the disease and the destructive process. As a result, there is a reddening and swelling of the gum tissue with an impairment of circulation, bringing about improper nourishment and waste removal. If an active circulation were maintained either by the eating of coarse foods or by the vigorous use of the tooth-brush, the damage done by the deposits would be greatly minimized. Want of cleanliness and lack of stimulation, however, usually go hand in hand.

There are other contributing causes of gum tissue disease which are not directly under the individual's control. Some of these causes are obscure and are not agreed on by members of the dental profession. One inescapable clinical fact that every observant dentist admits, however, is that the thorough removal of deposits is not only a most important factor in the prevention of gum tissue disease but that their removal also plays a most important part in proper treatment.

Thus the patient's problem of caring for gum tissue resolves itself into one of thoroughly removing deposits before they become so hard that they irritate gum tissue and can no longer be removed with a brush, and vigorously stimulating gum tissue to establish an active blood exchange as a protective measure against mechanical injury and bacterial invasion.

It has been found that the interdental method of brushing, to be described later, offers at the present time not only the most logical but also the most practical solution of the problem.

II. DENTIFRICES

THE FUNCTION of a dentifrice is to aid in the mechanical cleansing of the teeth without injury to them. For this purpose mild abrasives are employed, the safest and most universally used being precipitated chalk, calcium carbonate.

In addition to mild abrasives, soap is often added to dentifrices because of its reputation as a cleanser. From a mechanical standpoint, soapy dentifrices are a decided handicap in mouth cleansing because of the softening effect soap has on the bristles of the brush, particularly when used in conjunction with hot water. Every man makes use of this fact when he

shaves. Softened bristles make efficient cleansing and proper gum tissue massage impossible.

As soon as the word "acid" was associated with the process of decay, dentifrices containing various kinds of alkaline substances were introduced with claims that they would neutralize mouth acids and thus make them harmless. While this is theoretically sound, the use of these dentifrices for the prevention of decay has been disappointing.

Decay is not due to a general acidity of the mouth but to a "spot" acidity, the site of the little acid factory. Alkaline dentifrices cannot of themselves penetrate into the mucin film protecting the acid factory, hence they cannot effect a neutralization of the acid. It is only when the acid factories are disturbed and broken into by the bristles of the brush that neutralization by an alkaline dentifrice can be accomplished. However, after the acid factories have been disrupted by the mechanical action of the bristles, the saliva carries on the process of dilution and neutralization without the aid of an alkaline dentifrice.

Since bacteria were also associated with the process of decay, antiseptics and germicides have also been incorporated in many dentifrices. Their inability to penetrate into the little acid factories accounts for their failure.

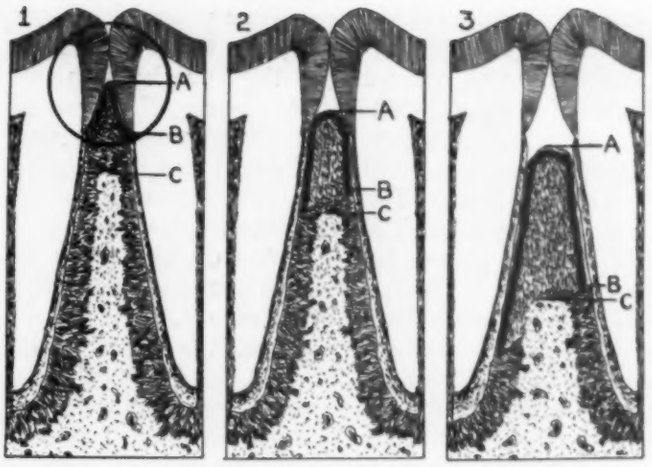
Medicines and drugs incorporated in dentifrices are valueless. Under no circumstances do they cure or prevent pyorrhea or other gum tissue diseases. Unfortunately they lead the patient to self medication when he should seek intelligent corrective treatment by a dentist.

In order to determine the merits or demerits of a dentifrice, its composition must be known. Unfortunately, the consumer has no convenient way of learning or determining the formula. The American Dental Association, realizing this difficulty, has come to his aid. It has established a council on dental therapeutics for the purpose of carefully and impartially analyzing both the composition of dentifrices and the claims of manufacturers. The association's seal of acceptance is placed only on the products of which it approves and should serve as a guide for a safe, yet effective, dentifrice.

In final analysis, dentifrices are really only pleasant aids to the mechanical cleansing of the mouth. As cleansing agents they depend entirely on the efficiency of the brush that applies them. No surface of the tooth can be cleaned unless it is actually touched by the brush. Dentifrices in themselves have no chemical or magic power.

III. MOUTH WASHES

AFTER the teeth have been brushed, a mouth wash should be used for thorough and vigorous rinsing of the mouth to eliminate the débris loosened by the brush. A mouth wash is, therefore, a rinsing solution and not a therapeutic agent for diseased gum tissue.



Section of adjoining teeth and structures which support them: A, tip of gum tissue between the teeth; B, attachment of gum tissue to the tooth; C, crest of the normal healthy bone tissue supporting the tooth. The first figure shows the normal, healthy condition; the structures enclosed in the circle are most susceptible to destruction. The second figure shows the beginning of gum tissue disease; the condition is still amenable to treatment. The third figure shows further progress of the disease; success of treatment at this stage becomes doubtful.

The safest and also the cheapest mouth washes or rinsing solutions to use are the following: warm water; a normal salt solution made by adding 1 teaspoonful of salt to 1 pint of water; a normal salt solution to which a pinch of baking soda, sodium bicarbonate, or borax has been added.

The mouth is most efficiently rinsed after brushing by using a tumblerful of warm solution. Only a small quantity should be taken into the mouth at one time so that the solution can be forced between the teeth with as much pressure as possible. A full tumbler of solution and a full minute's time are necessary to bring about thorough rinsing.

The curative power of mouth washes on gum tissue has been grossly overestimated. Mouth washes are ineffective in the chronic case of pyorrhea usually seen, neither checking nor curing the disease. The problem in successful treatment of pyorrhea is primarily the removal of all things that irritate the gum tissue, such as tartar deposits and faulty dentistry, and the bringing about of an active blood exchange in the gums by means of massage with a toothbrush.

The first part of the task must obviously be accomplished by the dentist; the second part must be done by the patient. Tooth structure and tartar are so much akin chemically that a mouth wash that would dissolve the tartar would also dissolve the tooth. Tartar must, therefore, be removed with steel instruments.

It is well known, of course, that mouth washes cannot correct faulty dentistry. Mouth washes are also ineffective in stimulating gum tissue, being quite incapable of bringing blood to the areas involved; many mouth washes contain astringents which tend to keep the blood from coming into the area.

Mouth washes that are sold as pyorrhea cures are usually advertised as germ killers, and no doubt some of them are, if they are held in the mouth for a sufficient length of time. But germs are merely secondary factors in pyorrhea, entering the gums only after a lesion has developed from irritations. The bacteria normally found in a healthy mouth are as incapable of producing disease as are the bacteria on the palm of the hand. In both instances, a break in the tissue is a prerequisite of infection.

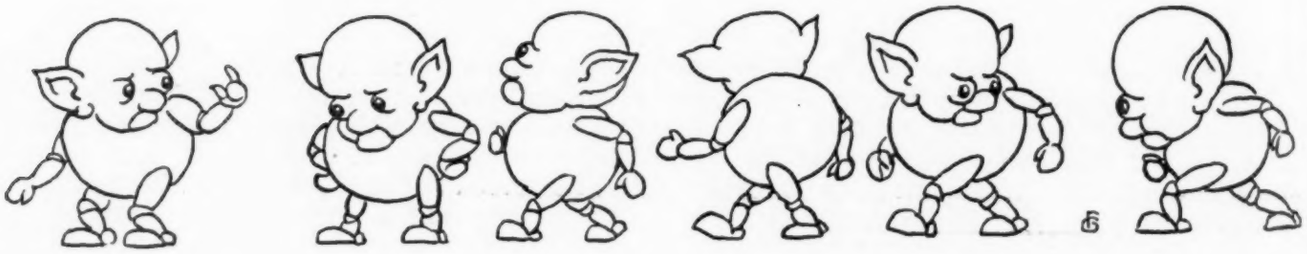
Proprietary mouth washes, irrespective of their claims, should be regarded merely as pleasantly flavored solutions for mouth toilet, quite on a par with such other toilet articles as talcum powders, toilet waters and perfumes. There can be little objection to their use if they contain ingredients that are harmless even when used over a long period of time and if their limitations are borne in mind.

Unfortunately there are some persons who are of the opinion that tooth-brushes may be discarded and that the mouth can be kept clean and healthy by the use of mouth washes only. The cool, clean feeling left by the agreeable, highly flavored and equally highly priced concoctions leads the user to think that he has a clean mouth. He has really only succeeded in disguising a dirty one. In using such mouth washes he is a worthy disciple of the Oriental whom he ridicules for using perfume instead of soap and water.

If the millions of dollars spent every year for tooth-pastes and mouth washes, because of false notions held concerning them, were spent for the frequent renewal of tooth-brushes and for periodic visits to a dentist as a prophylactic measure, there would be a marked improvement in mouth conditions.

[NOTE.—In the October HYGEIA, Dr. Gardner will continue his discussion of "Common Sense in Mouth Care" with chapters on the time factor in brushing, the tooth-brush, and the care of the brush.]

Who's Afraid of Hobgoblins?



Hygeia Dispels Superstitious Fear and Substitutes Fact

"The sensitive and easily influenced reader," writes *Marion R. Farren* in "Food Fads and Faddists," "feels the shivers go up and down his spine when he is confronted by such statements as, Will you live to middle life? Are you starving your body? Are you being poisoned by acid foods? Of course he wants to live to middle life and beyond it. . . . Persons who think they have food idiosyncrasies and hope to be benefited by a fad and those who have some organic disorder and are wavering between their physician's advice and the superstitions handed down by their ancestors are easy prey for such charlatans. They grasp for their quack advice like a drowning man for a line."

The Hobgoblin of the New Leisure has recently bobbed up to frighten many persons. Heretofore, a few have been born to a life of leisure, and some have achieved it. The rising generations, however, will have leisure "thrust upon 'em"; and whether it becomes a blessing or a curse will depend on its use. In "Man of Tomorrow," *Calvin T. Ryan* considers the Age of Leisure, the heritage acquired by the children of the Machine Age.

To be or not to be—a doctor. That is the question that confronts many a student of high school and college age. In "Medicine as a Vocation," *Dr. Wingate Johnson* gives to this problem his serious, impartial consideration and the benefit of years of varied experiences.

Hobgoblins of our own making may lead us from the path of health. "Perhaps one of the greatest difficulties encountered in successfully preventing disease," writes *Dr. Maurice F. Lautman* in an article on "Preventing Arthritis," "is the human tendency to gamble with health." Dr. Lautman brings to arthritic patients the hopeful message that if preventive measures are instituted before actual changes in the bone have taken place, there is a good chance of warding off serious and perhaps more permanent trouble."

The hobgoblins of fear and self pity ruin the lives of many; and this is probably especially true in reference to the handicapped. "He who carries the burden of yesterday, that of today and that of tomorrow," writes *Dr. John Ruhräh* in an article entitled "The Parent and the Handicapped Child," "has a load that will break the strongest. He who carries the burden of the day alone can usually stand up under it." Handicapped children should be taught to conform as nearly as possible to the normal, for the handicapped child is exactly like the ordinary child, plus his defect. He must be taught, says Dr. Ruhräh, that his handicap is not a brake but a spur.

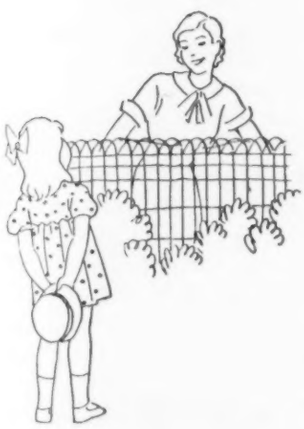
In an interview reported by Flora G. Orr, *Dr. Walter A. Wells* declares that the old adage "What you don't know won't hurt you" certainly does not hold true in reference to sinusitis. "Sinus trouble is not exactly new," says Dr. Wells. "Grandfather probably never heard of it, but nevertheless some of his friends may have suffered tortures on account of it. . . . The sinus victim is much better off today than he would have been had he lived fifty or more years ago, for today proper diagnosis can be made, and medical relief is available."

GOING TO SCHOOL

I'm going to school!
My collie dog knows it;
There's a lonesome look
In his face that shows it.

My canary bird knows it,
For I told him so,
And he sang four little songs
All in a row.

Our letterman knows it,
'Cause he said, "Dear me,
What a clever young lady
You're growing to be!"



Our neighbor knows it;
She said, "I fear
It will seem very quiet
'Round here, my dear."

Our garden man said,
"Now isn't that fine?
You're growing as fast
As the bittersweet vine!"

But it's strange about Mother,
For I heard her say,
"Our BABY is going to school today!"

—ELSIE M. FOWLER

Sufficient unto the Day:

The Evils of Overburdening the Child with Extracurricular Activities

By FAE DECKER

"THAT IS your last word," spoke the soft voice of Miss Clark. "Pencils down. Pass your papers forward to the head of the row. Miss Decker will gather them."

I stepped forward, an inexperienced assistant at that time and thrilled with the prospects of thirty spelling papers to check.

It was a superior second grade group with which I was receiving my training. They were pure delight to work with; there was not a "problem child" in the room, and there was nothing perfunctory about the fine supervision in the charming country school they attended.

At least, there was not a problem child until after this day's spelling papers were checked. I found unmistakable evidence of cheating on little Patricia Jean's paper. It was hard to believe my own eyes. Patricia Jean, flaxen-haired fairy of a child, from nursery school up had invariably topped her class in every subject. Her wholesome, quiet personality made her loved by every one. This was a strange situation and an exceedingly painful one. Of course, it became my duty to mention my unhappy discovery to Miss Clark. The following day she caught poor Patricia Jean "red-handed." She handled the situation most effectively by saying in an evenly controlled tone, "I'm sorry. Patricia Jean is not being fair."

There was a moment's strained and questioning silence in the little group. A deep pink burned through Patricia's pale skin. The spelling lesson went on. Patricia had been saved in the nick of time from her own folly.

The incident aroused a new and different interest in our hearts for this pupil who, by long odds, had always been the class favorite. What was back of her cheating? Her excellent progress had never before shown her in need of outside help to win top ranking. Naturally, as every wise teacher will do, the first thing we thought of investigating was her health. True, she was a bit underweight, but it did not rate as an immediate concern. We had noted for some time a growing nervousness in her and concluded that it was time to discover the cause. Her trip to the school nurse did not reveal any defects other than enlarged tonsils. The parents willingly accepted the suggestion to have the child's tonsils removed during Thanksgiving vacation. We were glad of this cooperation, as the operation diminished the risk of future illnesses, and its value was further proved when Patricia gained 4½ pounds almost immediately.

However, we were troubled when we noticed that her nervousness continued. We saw, also, the weary, unnatural way in which she played at recess and during rest period. When we discussed proper foods for growing boys and girls in our daily health class, it took but little questioning to learn that Patricia Jean was not eating well at home. We concluded that it was necessary now to consult the mother; we had the opportunity at a health play which we gave and to which we invited parents.

The whole enigma of our little pupil's state of nervousness was solved when her mother, beaming with pride, enumerated the achievements of her daughter in these proud words: "Yes, Patricia Jean has always been a good student. Her daddy and I are anxious to have her keep right at the top in all she does. We feel, too, that she should develop in other lines, and we have recently arranged for her to begin

dancing lessons. She is doing so well with her violin study that we felt it was time she tried a bit more."

Miss Clark stood aghast! She knew that Patricia Jean's summer vacation had been spent in a class of dramatic reading for children, with not more than a third as much time for play as the child needed. Fancy such a regimen as this being thrust onto the shoulders of an average, normal 7 year old child!

The added burden of outside study together with her parent's goading to keep her at the head of the class soon resulted in Patricia's removal from school and from all outside contacts, while she battled against what threatened to be a complete nervous breakdown. Poor little girl! No wonder she cheated in spelling that day. She was too weary to use her full powers, but she had to get 100 every day for that daddy and mother of hers, who realized their lack of wisdom too late.

Several years later, when I was no longer a student teacher, I had Patricia Jean in the sixth grade. She was still at the top in her studies, still sweet, wholesome and lovely, but still nervous. She will always have to fight the telling scourges with frayed nerves. A neurasthenic schoolgirl, a neurasthenic wife and mother! It is not a pleasant picture, but there are at least a score or so of Patricia Jeans in every American community of appreciable size today. A goodly share of them are caused through unwise pressure in childhood. All of them live life in too big a hurry. Some try to overcome these tendencies. A few succeed. A few more can keep themselves in fair control until facing a crisis. The great number of them, however, go through life complaining, ill, and wearing chips on their shoulders, nagging their husbands, scolding their children, using their tongues too much and their patience too little. It is a serious physical and mental illness, and no one sympathizes with the sufferer. They usually term it bad disposition.

These Patricia Jeans need medical attention. When they get it, they will be told that most of the cure is up to themselves. Their families must cooperate, but the secret of conquering the trouble lies in inner determination to gain and to keep that certain poise that bears one up through stress with apparent calm. No cure demands more of individuals before giving returns. The winners have earned a red badge of courage. They have learned to tighten the grip on each day's reins, to see the futility of giving in just once, to find joy in mastering one's personality. Acquiring that elusive inner poise will do it, and that means fighting. Perspiration has to act as advance payment for inspiration.

I have a friend whose life experiences have run the whole gamut of emotions and played the scale from C to C. She was totally unequipped for the searing tests that came to her. Blindly she groped from one decision to another; none of them was right. She always shed gallons of tears and wearied every one with wondering, "Will this be right or will that?" Such unguided groping did not make right decisions. Life became so miserably and heartbrokenly tangled for her that, by the time she reached her middle twenties, even her friends agreed that her life could not be worse. Then some one gave her the necessary stimulus to analyze herself and to begin carrying on again by facing the music calmly, making a few decisions quickly, slipping through the little troubles that every day brings without letting them hurt so deeply.

Today she is the most poised person I know, one of the best loved and one of the most successful. She told me, "My whole trouble dates back to middle adolescence. Remember what a prude I was? I was studious, too serious, read too many classics and thought life would be like them. Oh, how I daydreamed, and I developed an inferiority complex. When the opportunity came to get away from my old self and to be some one, I had no power of judgment and chose the wrong road for a while. It was terrible."

From the depths of my deepest sympathy, I wished that some one, a parent, a teacher or a friend, had been understanding enough to foresee the bitterness this serious girl was bringing on herself. She had needed outside development mildly, gradually. She had needed to be average in her schoolwork only once. Then when she did break free to venture forth without the shielding qualities of her books, her daily assignments and her A grades, perhaps life would have seemed a little kinder.

"She is doing so well with her violin study that we felt it was time she tried a bit more."

Recently I overheard a mother of a tiny 3 year old girl boasting that her daughter had started taking dancing lessons and that she was giving the child a half hour's daily practice at the piano in addition. "I am so afraid that if I don't start her out while she is young to do all the things I want her to do she will never master any of them." Her words did not make sense to me. Imagine thrusting such a weight onto a 3 year old child who does not even talk plainly yet, whose whole world is a pageantry of strange loveliness to be explored by the questing little feet, hands and senses! It is enough that the 3 year old child copes with each day's play adventures, learns to obey the parental expostulations and to get along with his playmates.

The whirligig of madness born of the late jazz age wrecked more strong bodies and disturbed more stabilized nervous systems than common sense living can repair in many a decade. It is gratifying to note the recent tendency toward living life more sanely, more quietly and ultimately with more refinement.

To try to thrust little children into new experiences before they are naturally ready for them is a stigma on parental intelligence. Adults who assume more responsibility in any field than their physical strength warrants show a flagrant lack of prudence. The bill collector will certainly come later in the form of inefficiency and ill health, and his interest takes greater toll than any banker or loan company.

HEALTHGRAMS ✣ from Articles in This Issue

¶A recent routine examination of 1,000 persons showed that 95 per cent had unhealthy gums, ranging from a mild inflammation of the gum tissue with only slight, occasional bleeding to a pyorrhea so marked that the removal of all teeth was advisable. *See page 813*

¶With a total of approximately 26 million school children in this country, there are at least 10 million who are handicapped. Of these, only 210,802 are now receiving any form of special educational training or consideration. *See page 821*

¶In the present decade, with about 50 per cent of the population showing infection, the deaths from tuberculosis constitute only 5.5 per cent of the total deaths. *See page 804*

¶Fresh bread, in itself, is not indigestible, but there is a tendency to swallow it without proper mastication and mixing with saliva which contains an enzyme that begins starch digestion. *See page 832*

¶It is conservative to say that nine stutterers out of ten do not have the miraculous good fortune to outgrow stuttering. *See page 790*

¶To try to thrust little children into new experiences before they are naturally ready for them is a stigma on parental intelligence. *See page 818*

¶No campaign that does not take into account the Dr. Jekyll and Mr. Hyde behavior of the itch mite is likely to be permanently successful. *See page 826*

¶Intensive study of their school lessons by normal children before retiring has no appreciable effect on children's sleep. *See page 781*

¶The average child who has poor vision, dull hearing, decayed teeth or goiter has a lower intelligence quotient than the child without such imperfections. *See page 796*

¶It is of practical importance to note that Bacillus botulinus is incapable of producing toxin in the presence of more than 8 per cent of salt or over 50 per cent of sugar; nor will the toxin be formed in an acid medium. *See page 784*

¶During the six years since 1927 when automobile accidents to adults increased 32 per cent, accidents on our streets and highways to children were reduced 24 per cent. *See page 810*

¶Time and perseverance establish a practice for the competent dentist, but because the dental quack does not render sufficiently satisfactory service, it becomes imperative for him to use advertising mediums to obtain new customers. *See page 801*

¶The standard distance for near vision, that employed for such tasks as reading and sewing, is 14 inches from the eyes. *See page 829*

¶"The old notion of health—and it sticks in many people's minds today—was not *being well*, but constantly *getting well*." *See page 794*

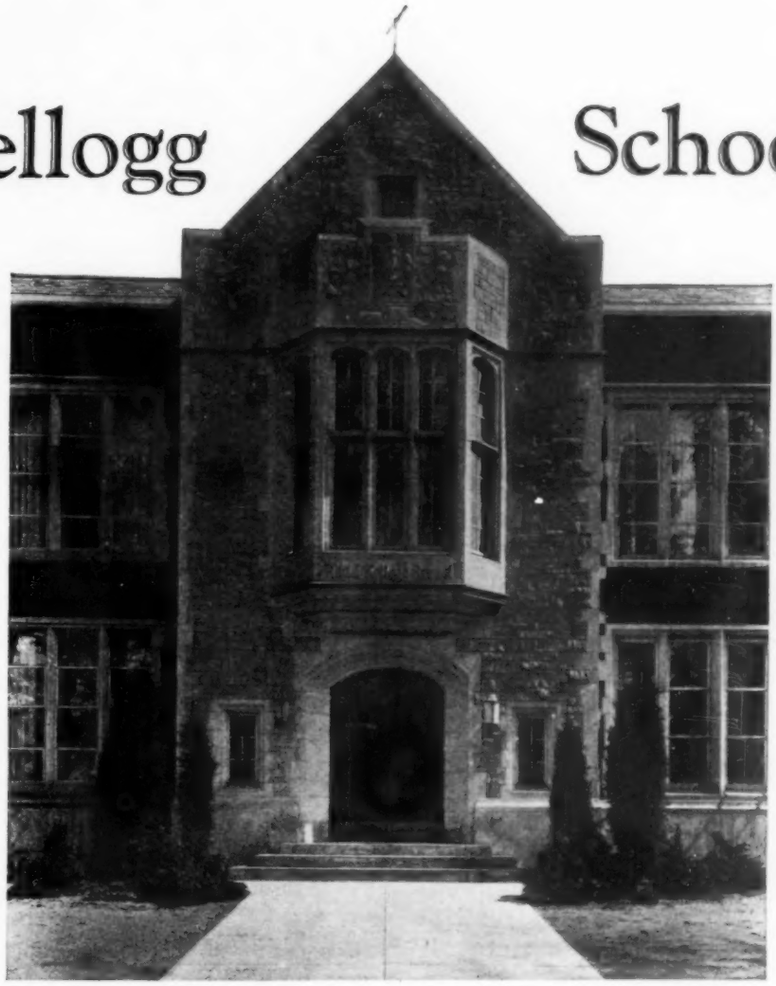
¶Certainly one of the things the wise parent investigates is the health angle of the college. *See page 778*

¶Only the monkey has responded favorably so far as a source of infantile paralysis serum. *See page 808*

¶Walking 1 mile in an hour requires 62 calories more than sitting quietly. *See page 824*

The Ann J. Kellogg School

By W. G. COBURN



Founded with the high purpose of alleviating much of human suffering, the school is dedicated to child health.

POINTING the way to the fullest conservation of one of the country's greatest present and future resources, the children who will be the American nation of tomorrow, the White House Conference on Child Health and Protection declared:

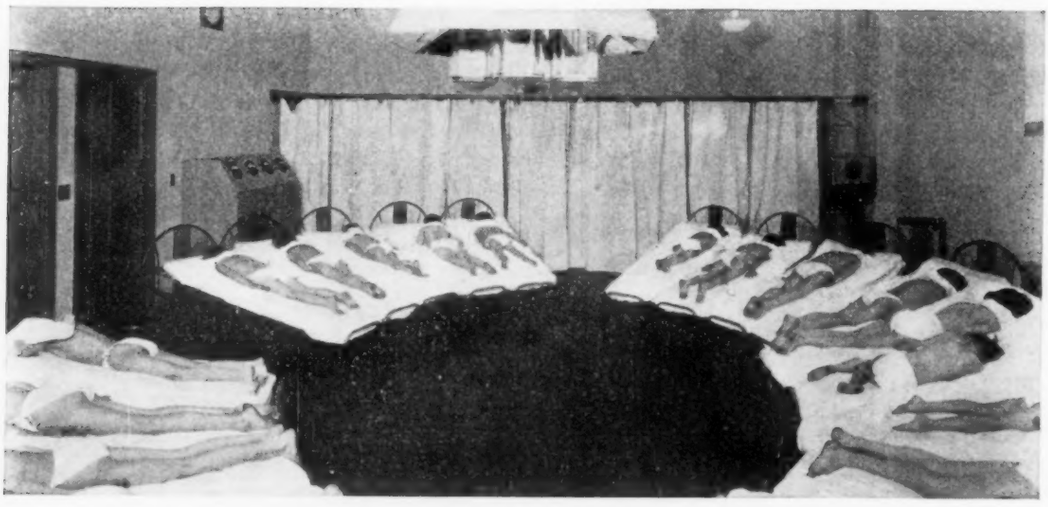
If we want civilization to march forward it will march not only on the feet of healthy children. Beside them, shoulder to shoulder, must go those others, those children we have called handicapped, the lame ones, the blind, the deaf and those sick in body and mind. All these children are ready to be enlisted in this moving army, ready to make their contribution to human progress; to bring what they have of intelligence, of capacity or spiritual beauty. American civilization cannot ignore them.

An appreciation of the true gravity of this national problem may be had from the bare facts that, with a total of approximately 26 million school children for the entire country, there are at a conservative estimate at least 10 million who are handicapped. Of these, only 210,802 are now receiving any form of special educational training or consideration.

Thus, at the very forefront among our neglected resources, we have scattered throughout the United States more than 9,500,000 who are not receiving any part of the things listed in the "declaration of rights," drawn up by that conference, which states that the handicapped child is entitled:

1. To as vigorous a body as human skill can give him.
2. To an education so adapted to his handicap that he can be economically independent and have the chance for the fullest life of which he is capable.
3. To be brought up and educated by those who understand the nature of the burden he has to bear and who consider it a privilege to help him bear it.
4. To grow up in a world which does not set him apart, which looks at him not with scorn or pity or ridicule but which welcomes him exactly as it welcomes every child, which offers him identical privileges and identical responsibilities.
5. To a life on which his handicap casts no shadow, but which is full day by day with those things which make it worth while, with comradeship, love, work, play, laughter and tears, a life in which these things bring continually increasing growth, richness, release of energies, joy in achievement.

That Battle Creek, Mich., has been able to take the lead in following up this work of the White House Conference in the Ann J. Kellogg School is due in large measure to the life-long interest in the problems of child welfare held by W. K. Kellogg. Because he shares with the Battle Creek board of education the costs of construction and has arranged for financing those expenses not borne by the state's provisions for handicapped children, the school places no



Light that is as near normal sunshine as it is possible to obtain artificially is radiated from four special sunshine carbon arcs.

additional burden on local taxpayers, although it is a regular unit in the Battle Creek public school system.

The school has been appropriately named in memory of Mr. Kellogg's mother, Ann J. Kellogg, who was one of Michigan's highly esteemed pioneer teachers and whose children and grandchildren attended the old school that formerly occupied the same site. Founded with the high purpose of alleviating much of human suffering, the school is dedicated to child health—moral, mental and physical. Its aim is to bring equal opportunity to all types of pupils for the development of those individual abilities which will enable each to meet most effectively the obligations of life.

The Ann J. Kellogg School, dedicated in 1931, is divided into three departments. Two of these, the elementary school and the junior high school, were organized for normal children and include the greater percentage of the pupils enrolled.

Organized around and coordinated with these departments for normal children is a department of special education designed to provide for all types of atypical children. This organization was developed to make an analysis of the mental, physical and emotional status of the children, to eliminate or minimize their handicaps so far as possible, and to assist them in the discovery of their respective interests and aptitudes.

Adjusted program classes are provided for those pupils who experience difficulty with the academic phases of the regular class work. A special attempt is made to discover their outstanding aptitudes and abilities. The curriculum is not merely an abbreviated form of that used for the rest of the school, but it is definitely selected on the basis of its present and future value in the lives of these boys and girls.

A 17 year old Bulgarian girl who recently enrolled in one of these classes had never attended any school, either in America or in her native country. Because of her partial deafness and her lack of knowledge of the English language, her parents had never permitted her to go any place unaccompanied. Naturally, her lack of social contacts and her inability to read or to hear so closed the outside world to her that her apparent retardation was greatly accentuated. After being in the school for four months she was one of the happiest pupils enrolled, because she experienced for the first time the thrill of associating with others, of assuming certain responsibilities for herself and of definite intellectual achievement.

Home environment and physical health of children are important factors in their mental health and consequent social adaptability. Pupils who are unable to adjust themselves to life in a sufficiently satisfactory manner are placed in social adjustment classes. The program is designed to correct the maladjustment and to get them back into the normal groups as quickly as possible. The value of the work is demonstrated in the finer qualities of citizenship acquired by these pupils.

The lowered vitality groups are placed in open air classes. Anemic, underweight and malnourished children form a large percentage of the enrollment. They are provided with rest, milk, cod liver oil, heliotherapy and suitable physical exercise. They work and rest in rooms that are always at a temperature of 60 F. One boy made a net gain of 11 pounds over his original weight in eight months in spite of a temporary illness and loss of 5 pounds during that period. Another interesting case is that of a little 8 year old girl apparently suffering from neurotic disturbances, all of which were easily corrected through mental hygiene and a change of diet.

Because of the equipment and personnel required for its administration the orthopedic section of the special education department is the most extensive of all. The hydrotherapy room is equipped for warm water treatments, whirl pools and brine baths. The warm water pool is kept at 95 F. and is used for the reedu-

cation of paralyzed muscles. The buoyancy of the water supports the child sufficiently to make exercise much easier, and the heat stimulates circulation and assists in relaxation. The use of the whirl pools is equivalent in effect to a general massage.

The psychology involved when children find that they can use their muscles in many ways that are new to them plays an important part in their progress.

Lamps and bakers are used in the physical therapy room for reeducation of muscles by heat and massage. The room is also equipped with such apparatus as a punching bag, stall bars, spastic ladder, and mats. The room is used for corrective physical exercises.

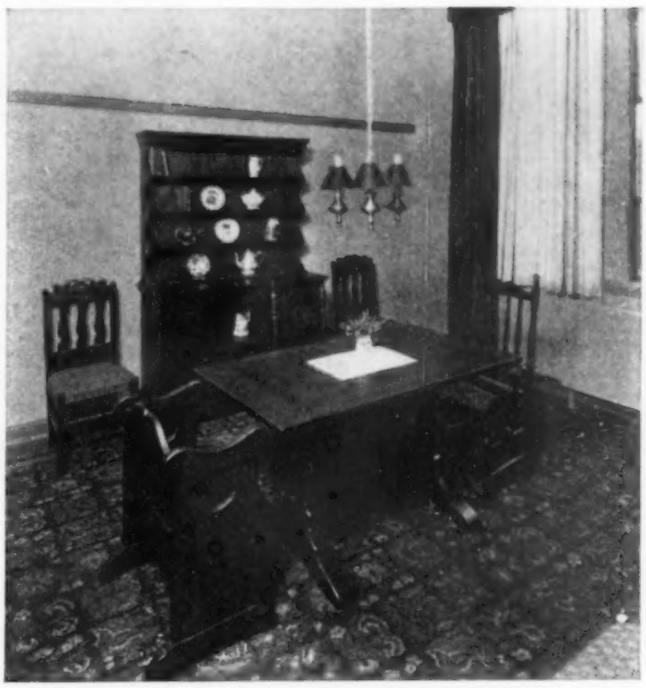
The work in occupational therapy supplements that in physical therapy. The purpose is to provide therapeutic exercises that will be interesting as well as beneficial. It includes units in such work as sewing, weaving, cooking. clay modeling, typing, printing, wood work and basketry.

Heliotherapy is furnished in a well equipped solarium. Reclining cots are arranged in a circle below the source of light. The light is radiated from four special sunshine carbon arcs and is so filtered that on reaching the child 8 feet away it is as near normal sunshine as it is possible to obtain artificially.

Before discussion of this particular phase of special education is dismissed, asknowledgement should be given to the work of the orthopedic surgeons. There is a little girl who was born with a congenital dislocation of the right hip. An operation, followed by submission to a plaster cast and later to a brace, has made normal walking nearly possible through the additional aid of sole and heel lifts. Another girl came to school walking on the toes of her right foot and carrying her arm in a bent position. An operation to lengthen a muscle in the back of her leg and the placing of her arm in a cast to straighten it have marvelously changed her appearance. With a little diligence on her part, she should be able to approximate perfect physical condition within a short time.

Proper eye hygiene and conservation of sight are the objectives of the sight-saving classes. Equipment used for this sort of work includes heavily outlined maps, textbooks printed in 24 point type, large black lead pencils, and paper of widely spaced ruling. To eliminate glare, the blackboard is tilted and the desks are of dull finish. No pictures or any other objects including detail or likely to cause eyestrain are used. Blind children and those whose vision is becoming worse in cases of progressive myopia are taught to read Braille.

Children who are so deaf that they are handicapped in attempting to carry on ordinary conversations are taught profile lip reading. Congenitally deaf children are, of course, taught



In the model dining room, girls of the home economics class set the table, serve meals and learn the rôle of gracious hostess.

to do the same and also to speak. This is painstaking work and requires special technic to develop in them the ability to use properly the various organs of speech and to produce sounds which they themselves have never heard.

Speech correction classes have been included for those with such defects as lisping, stuttering, stammering and cleft palate.

Specially gifted children often find the ordinary school work monotonous. As a rule, these pupils are capable of carrying a greatly enriched program with no more effort than is required of the ordinary child to do the work of the regular grades. Organized into major work groups, these pupils can learn to do dramatic work in foreign languages, creative work in music and art, and elementary experiments in science at unusually early grade levels. They also learn to assume an initiative and responsibility that is compatible with their natural endowments.

With so much effort and equipment devoted to the special education department, it may appear that the normal child has been quite forgotten, but this is not the case. All children of the school can avail themselves of the advantages of a well equipped gymnasium, solarium, shop rooms, cafeteria, dramatics room and library, and all are served alike by a supervisor of health, a nurse, a dentist and a director of pupil adjustment.

The model rooms for kindergarten and first grade pupils appeal to adults and children alike. Built between two classrooms, and with entrances from either, is a miniature house. The lower floor contains an industrial arts shop, wardrobe and lavatory; *(Continued on page 836)*

A Piece of Butterscotch Pie

By EVELYN BLANCHARD

X HAD a passion for butterscotch pie. X was a student in the department of nutrition at the university, and she knew that instead of eating pie, which contained only calories, she should eat spinach and lettuce, which contained vitamins and minerals as well.

If she included the pie as part of her dietary and thus had the correct number of calories, her diet was too low in vitamins and minerals. If she ate the pie in addition to her regular dietary, she had the right amount of minerals and vitamins, but the calories were too high. The extra calories would soon mean added fat, and no one wants to become fat. Certainly X did not. One day the idea occurred to her that she would make a survey of the literature on the subject to find out how she could eat that piece of pie in addition to her regular well balanced diet and at the same time not gain weight.

To eat or not to eat was not the question; the question was what to do about it after it was eaten. One piece of butterscotch pie the size that X coveted contained about 500 calories. The problem thus resolved itself into how to get rid of those additional 500 calories a day. If X could solve this problem she could also help her friends who enjoyed eating candy bars and drinking malted milks in addition to their regular meals.

X walked a great deal, for she knew that this used up energy, and she thought that perhaps she could walk enough to use up the 500 calories. A trip to the library revealed that Benedict and Johnson had performed exactly such an experiment on twenty-five young women. At the slow rate of about 1 mile an hour these women expended in each mile 62 calories more than the amount expended while sitting quietly. Thus if X wished to overcome the ill effects of the pie by walking at this rate, she must walk about 8 extra miles and spend eight hours of her valuable time walking. This would never do. However, 1 mile an hour is a slow rate, so she thought that perhaps if she walked faster she could utilize the pie more quickly.

Smith and Doolittle had performed experiments to find out the energy expenditure of women during horizontal walking at various rates of speed. In order to find the number of calories burned at these various speeds the subjects breathed oxygen from light rubber bags which they carried on their backs. The amount of oxygen in the bag was measured before and after the experiment. For every liter of oxygen

The idea occurred to her to make a study to find out how she could eat the pie and her regular meals and still not gain weight.

burned in the body, about 5 calories of heat energy is given off. These subjects walked 1.1, 2.2, and 3.3 miles an hour. Walking at these rates, X would burn up 57 calories when walking at 1.1 miles an hour, 105 calories when walking at 2.2 miles an hour, or 179 calories when walking at 3.3 miles an hour.

Even if X walked at the rate of 3.3 miles an hour, she would have to walk 9¼ miles, or spend almost three hours to overcome the effects of the pie. It plainly pays to walk fast if you are desirous of using up calories. However, if X had desired to use up the most calories possible in walking from school, which was about 1 mile, she could have done so by sauntering as slowly as possible. This method is for lazy persons who have a great deal of time; to X, time was valuable.

One morning as she laboriously climbed the stairs to her class on the top floor of the home economics building, another bright idea occurred: How many times would it be necessary to go up and down stairs in order to work off the pie? She cut her class, rushed over to the library and began to look frantically for the answer. She found it at last, in the *American Journal of Physiology*. Benedict and Parmeter had made a study of the energy metabolism of women while ascending and descending stairs. Twelve young women were used as subjects in this experiment. Part of these experiments were carried out in the Cornelia Clapp Laboratory at Mount Holyoke; the rest were performed

on a mountain stairway consisting of an unbroken flight of 522 steps. From their work it was found that it takes from ten to thirteen times as much energy to ascend a verticle distance on ordinary stairs as it does to walk horizontally the same distance, and fifteen times as much energy on the unbroken flight of stairs as to walk vertically the same distance. They also found that it takes about five times as much energy to descend stairs as to walk horizontally.

To go from the first to the fourth floor of an ordinary college building is a vertical distance of about 15 yards. This would require about 9 calories. At a medium speed, it would take about one-half minute to go up and down these stairs once and use up 12 calories. Thus it would take approximately twenty-one minutes to use up the energy given off by that one piece of pie.

Although X loved her butterscotch pie, forty-two return trips from the first floor to the fourth floor seemed to be quite a price to pay for one piece of pie.

One morning as X was ironing her dress before going to class, the happy idea came to her that perhaps she could iron away the energy gained through that piece of butterscotch pie. Swartz had measured the energy of certain household tasks, and ironing was included in the list. X found that ironing raised the energy requirement about 80 per cent over the resting requirement. This meant that it would take X twelve and one-half hours to overcome the effect of the pie by this method. Ironing for about an hour was all that X could stand at one time; so this was no solution to her problem.

X typed for an hour on her term report, and how tired she was! Perhaps this was the solution to her problem. She found that Carpenter had made a study of the increase in metabolism due to the work of typewriting. He found that the increase above the caloric requirement when at rest was 7 calories for each thousand words. If it takes 7 calories for 1,000 words, it will take 71,500 words to use up the energy given off by the pie; and at the rate of sixty words a minute it would take about twenty hours. Twenty hours for one piece of pie was entirely too much.

The happy idea came to her that perhaps she could iron away the energy gained through that piece of pie.

X had worked so hard trying to solve her pie problem that she got up, opened a window, and stretched and stretched. Thinking was hard work.

Work—Calories—Pie!

Yes, Benedict and Benedict had made a study of the energy requirements of intense mental effort. The subjects rested quietly on a bed and did mental multiplication problems. They found that it took about 8 extra cubic centimeters of oxygen a minute to do this mental multiplication. Since about 5 calories of energy is given off for every liter of oxygen used, it would take 125 minutes to use 5 calories, or about eight and one-third days to use up the piece of pie.

It was difficult for X to understand how mental effort could make her feel so fatigued and yet have so little effect on the general metabolism and how walking, which tired her so little, had a great effect on metabolism.

Does X dare to eat that piece of butterscotch pie?

X walked a great deal, for she thought that perhaps walking would use up the 500 calories.

Scabies is a disease of poverty; it may occur at any age.

The ITCH MITE

Chapter IV of Our Parasites

By CLAUDE LILLINGSTON

THE TERMS *la gale* in France, *kraetze* in Germany, *scabbia* in Italy, and the itch or scabies in Anglo-Saxon countries have an unpleasantly familiar significance. Scabies is a common disease of the skin provoked by Sarcoptes scabiei, often referred to briefly as Acarus. Because of its minute proportions, this parasite escaped any identification with the rash and itching that it provoked until a comparatively recent date. It is true that Aristotle knew the secret of the itch mite; but that knowledge was lost to the world for many centuries, and it was not until the twelfth century that Avenzoor rediscovered the parasite. One is tempted to ask, a little querulously, how such a common parasite, and one whose dimensions are certainly not microscopic, could have avoided detection all this time. No microscope is required for its study, and it appears as a fairly lusty creature under an ordinary magnifying glass.

In temperate climates the itch mite is the same whether it is found in America, Europe or elsewhere. It has some more or less closely related cousins that deserve passing notice before the common itch mite is studied in detail. There is the itch from which workers in copra suffer; it is provoked by a small acarid, Tyroglyphus longior, which lives on the kernels handled by copra workers. It does not burrow in the skin as the common itch mite does. There is another exotic itch mite that troubles work-

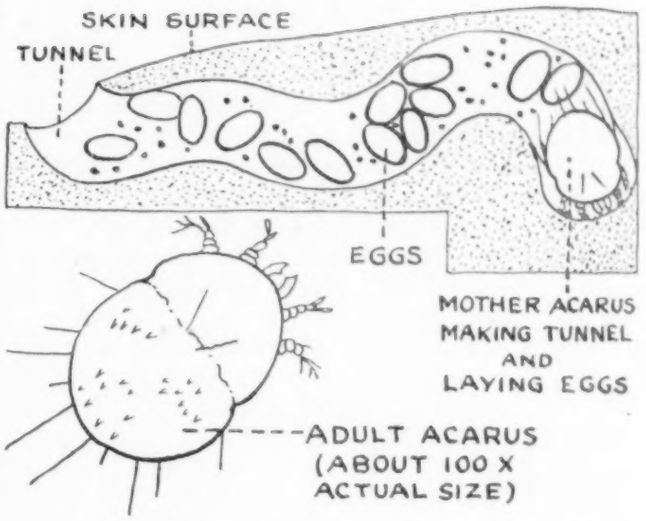
ers on tea plantations. But only professional entomologists and the inhabitants of these specially afflicted areas in the tropics need concern themselves with such distant relations of the acarus.

Many animals, including the horse, ox, sheep, goat, dog, cat, camel and lion may be adopted with indifferent impartiality as hosts by the acarus. Human beings may be infected from any of these sources, and it is a moot point how far the itch mites of these various hosts may be considered as identical, the one with the other. The fact that all can transfer themselves to man and establish themselves securely in his skin is an argument of limited value in favor of regarding them all as one and the same species. It may be added in passing that scabies assumes a more troublesome character at some times and in some places than in others. Norway, for example, has the unsavory reputation for cultivating a particularly severe form of scabies.

Scabies is extremely contagious. It is commonly contracted by sleeping with a patient or by occupying his bed, the linen of which has not been changed. There are many other less usual ways by which the parasite succeeds in migrating from one host to another. Practical communism in the matter of towels, tools and such intimately used articles facilitates such a migration, and contagion may be effected by nothing more intimate than a hand-shake. The disease is one of poverty; on the rare occasions when the educated and well-to-do classes suffer, the disease is an accident, a passing incident. It occurs at all ages and in both sexes, and is liable to be particularly troublesome in time of war, both in the fighting forces and in the civilian population as a result of that personal and wholesale intimacy and promiscuity which war imposes with blind impartiality.

The dimensions of the female acarus are gigantic when compared with those of the male. Both the male and the female are round or oval in shape, and the color is whitish. The skin is finely lined and studded with small bristles. There are four pairs of legs which help to give a tortoise-like appearance to their owner. The male takes cover under the scales that the female's burrowing propensities have brought out on the skin. Sallying forth from this lair, he meets the female in the open, and they pair while promenading about on the skin of their host. The irritation caused by these mites is not due to their crawling over the skin, as is sometimes stated, but to the mechanical injury caused by the burrowing and to the action of an acrid fluid, produced by the mite, on the skin of its victim.

After pairing, nothing more is heard or seen of the male, whose death is enshrouded in inglorious mystery. The fertilized female, however, now begins the most important phase of her life. With the help of the cutting instruments with which she is fitted, she proceeds to dig herself into the skin, tunneling her way in a direction more or less parallel to the surface. The bristles with which her back is studded are her undoing. For most of them, if not all, point backward. This means that she cannot turn around and walk out of her own tunnel. So she is doomed to progress head foremost for the rest of her life and to end her days in the grave of her own digging. She may, however, live several months in her tunnel, in which she lays an egg or two every day. The burrowing period corresponds to the time the host spends in bed; the comparatively even temperature and the quietness of the host doubtless are conditions which favor this subterranean operation. The female advances about 2 or 3 mm. (about $\frac{1}{10}$ inch) every day.



The female acarus is dainty in her choice of skin. She likes it thin, folded and preferably moist. Any part of a child's skin is sufficiently thin and delicate to meet her requirements, but in the case of adults she usually selects the skin between the fingers and toes, and about the wrists and elbows. Any other part of the body with thin, folded skin will serve her purpose as a home.

The eggs, laid singly or in small groups, are enormous in relation to the acarus herself. No wonder, therefore, that she has to give herself a good rest after each egg is laid. Provided she is undisturbed and has been sufficiently wise in the site of her operation, her tunnel is fairly long. As many as twenty-one eggs have been found in the same tunnel.

The larva, on hatching, is said by one authority to escape from the tunnel on to the surface of the skin and to start tunneling on its own account. According to another authority, the newly hatched larva tunnels more deeply into the skin below the floor of the maternal tunnel, its presence provoking the well known scabies vesicle, or pimple. At all events the larva is six legged and hatches out of the egg in from three to six days. The larval stage lasts only

about two days. Little is known of the life history of the first nymph, but it probably leads a sedentary life in the larval tunnel. Its legs are now reduced to four pairs. Between the first and second nymph stages the young acarus molts, and with the completion of this process, nymphs of two sizes can be distinguished; there are comparatively large females and negligible little males. From fourteen to sixteen days are required to complete the life history of the acarus from egg to adult.

There are several diseases of the skin that may resemble scabies more or less closely; and even the expert dermatologist refuses to commit himself off-hand to a diagnosis of scabies, the more so because it entails much loss of personal prestige for the patient, a disconcerting and rather distressing search for sources of infection among friends and relations, and treatment which, to say the least, is tedious and unpleasant. It is therefore a golden rule never to diagnose scabies in the absence of the acarus herself. She must be demonstrated in the flesh. She is at the blind end of the tunnel, and she can be located under a strong light with a magnifying glass or pocket lens as a minute glistening speck with dark margins. The tunnel can be gently slit open by a fine needle introduced at its free end and pushed along it parallel with the skin. When the point reaches the other end, the female acarus, resenting the intrusion and in sheer self defense, seizes the point of the needle with her suckers. Thus voluntarily impaled on the needle, she can be transferred to a drop of diluted glycerin and placed under a magnifying glass for further study. It should be remembered that her tunnel is not always whitish; it may even be darker than the surrounding skin.

Knowledge of the life history of the acarus is necessary if treatment is to be rational. As has been seen, there is not only the sedentary, tunneling stage but also the free and roving stage when the parasite may be anywhere on its host's body, on his clothing or in his bed. No campaign that does not take into account this Dr. Jekyll and Mr. Hyde behavior of the acarus is likely to be permanently successful. The acarus is particularly vulnerable in its tunneling stage. It is only necessary to rub such acarus poisons as sulphur or balsam of Peru into the skin, and the trick is done. The acarus is caught like a rat in a trap; and adult female, eggs, larva and the still immature young males and females perish miserably. Their dead bodies, as well as the sulphur introduced into the tunnels, are liable to make the skin rather sore and inflamed for a few days after treatment.

The details of treatment require conscientious attention. Treatment should begin with a hot bath in which the patient uses plenty of soap and scrubs every part of the body with a rough wash-cloth or brush so as to remove the protecting scabs and scales, thus exposing the openings of the tunnels. Sulphur ointment should then be rubbed vigorously into the skin of the whole body. The standard sulphur ointment of the U. S. Pharmacopeia is liable to provoke an unnecessarily violent reaction in abnormally sensitive skins. Many compound ointments have been prepared with the sulphur element much diluted and the antiparasitic action enhanced by the inclusion of such other drugs as balsam of Peru and beta-naphthol. Whatever ointment is used, it is well to experiment with a strictly limited patch of skin at first, if peculiar sensitiveness to the ointment is anticipated.

A satisfactory ointment having been obtained, it is rubbed into the skin night and morning for from two to four days, during which the patient wears the same underwear all the time. After the last application, the patient waits a few hours and then takes another hot bath, again using plenty of soap. He now changes into clean underwear and is provided with fresh bed linen. Persistence of the itching for some time afterward need not disquiet the patient; it is a reaction to the treatment and not necessarily a sign of its failure. Small children and persons whose skins are peculiarly sensitive to sulphur should be treated with balsam of Peru alone. It is gently rubbed into the skin of the whole body in the evening, and the night clothes are impregnated with it. The next morning a hot bath is taken in which plenty of soap is used. A simple, cheap and effective treatment consists of applying paraffin to the entire surface of the body and making the patient sleep in clothing soaked in paraffin for two consecutive nights. The inflammable condition of the patient must not be overlooked! Some persons are definitely allergic to paraffin, and most persons dislike its smell quite heartily.

If by any chance the disease persists after such treatment, the odds are that the blame does not rest with the ointment, whatever its composition, but that failure is due to the fact that the freely roaming stage of the parasite has been neglected. Unless the patient's clothing and bedding are sterilized at the same time that all the parasites in his skin are destroyed, reinfection is almost inevitable. Linen should be boiled and woolens baked. Outer clothing may be treated with baking or ironed with an extremely hot iron. Even all these precautions may prove futile if some one else in the household harbors the parasite. It is therefore always desirable to make a complete survey of the whole family and other persons with whom one comes in contact before taking action. Otherwise the treatment may have to be repeated more than once.

[NOTE.—In the October HYGEIA, Dr. Lillingston will continue his discussion of "Our Parasites" with a chapter dealing with the head louse.]

The Function of Sight

Chapter III of THE EYE BOOK

By Hyman Cohen

THE EYE is built to maintain and protect itself and to function in seeing. By itself it can see only as a camera sees. It can receive images from the outside on a sensitive plate, the retina, but it does not see. A mirror reflects an image, but it does not see. The camera, too, pictures the image of an object, but it does not see. To see really means to receive an image and to know that it is there. To accomplish this, the optic nerve connects the eye with the brain where the vision becomes a part of the consciousness. In fact, the eye is nothing but an outpost, a lookout of the brain, a part that has budded out of the brain to view the world and to report on it. It is a case of Old Curiosity, the man in the brain, leaving the bony walls of his house to take a look for himself.

One sees both by virtue of light and by the aid of the form of some object. Light falls on an object, is reflected into the eye and passes through the transparent conducting structures of the cornea, the liquid, aqueous humor in the lens and the albumin-like substance, or vitreous humor. The light rays start from the distant object in parallel formation but are brought together to a point, focused, by the curved cornea and lens. When the point of the pencil of light has reached the deepest layer of the retina, sight is made possible by a chemical process in much the same way that the negative is made on the chemically sensitive plate of a camera. The structural elements in the retina, which are the deepest roots of the fibers of the optic nerve, are concerned with image formation and are called the rods and cones. The chemical employed is called visual purple. Each tiny root unit or cell pictures a part of the object observed. They each make one stroke. All the little "brush strokes" of the root units, the rods and cones, together make an image, a visual impress of the form and color of the

Light is needed by man to live and by the eye to see; one sees both by virtue of light and by the aid of the form of some object.

VERY POOR
AFTER SNELLEN'S TEST TYPES
TO BE READ AT A DISTANCE OF 10 FT.: ACUITY VALUES CLOSELY APPROXIMATE
VERY POOR
←POOR→
←— FAIR —→
(CHARTS ARE ½ NATURAL SIZE, AND SPACE BETWEEN LINES HAS BEEN TAKEN OUT)
NORMAL→
←NORMAL
V Z Y A C E G L N P R T

Tests are based on the visual unit; for children and illiterate persons, the letter E is used.

object. Other images of other objects are made by other groups of rods and cones, and thus the relationship of objects in space is defined. The optic nerve fibers that lead off from the rods and cones transfer the picture made, through a number of relays and connections, to the brain; then there is sight.

Visual Acuity Is Standard of Measurement

To see for the purpose of identification and correlation, one must see distinctly; that is, one must see one thing separate from the other. That depends on the size of the object, the distance between the eye and the object, and the amount of light. The standard of measurement of sight, based on the average powers of the normal eye, is called visual acuity.

It is found that, at 20 feet and in a good light, the normal human eye can distinguish two black dots on a white background, or two parallel lines, each $\frac{1}{16}$ inch wide with a space of the same width between them. If the distance is increased to more than 20 feet, the two blur into one. This is the visual unit, and on that basis all tests are founded.

In practice, letters conforming to that principle are employed to test the distance vision. For children who have not yet learned the alphabet and for illiterate persons, a series of the letter *E*, scaled to the same sizes as the other letters employed, is used. The *E* is printed on the chart with its free ends up, down, to right and to left. To make it simpler, the free ends of the *E* are called fingers, and the person being tested is asked to indicate the direction by placing the fingers of his own hand in the same position as those of the *E*.

In testing the distance vision, one places the test letters at a distance of 10 feet from and on a level with the eyes in a good light, preferably indirect. Each eye must be tested separately while the other is covered. The lines are read from above downward. The normal eye will read the normal line without blurring, doubling or distortion of the letters. If the normal line is read at 15 feet from the eye, the vision is better than normal, 20/15; if it is read at 20 feet, which is rare, then the vision is 20/10 or twice the normal acuity.

Counting fingers, held spread apart, is used as a test if the sight is so poor that the top letter on the chart cannot be read at the given distance.

Hand movements are employed if fingers cannot be counted, and the distance from the eye at which these movements are perceived is noted.

Perception of light is the minimal threshold of sight and is the test applied if hand movements are not recognized. In making this test the fellow eye is covered with a folded handkerchief and the palm of the hand is placed on top of that. The room is darkened; a lighted candle is held before the eye tested, and the light is alternately covered and uncovered. A flashlight may be used and switched on and off. If the presence of light is not recognized, the eye is absolutely blind.

Lens of Eye Adjusts Itself to Distances

When the normal eye looks at a distant object, it does so without effort. When, however, it shifts its gaze to an object closer than 20 feet from the eye, it has to make some adjustment in order to focus distinctly. The closer the object is to the eye, the greater is the degree of adjustment necessary. This is brought about by two shifts which take place at the same time. One shift is accomplished by the drawing closer together, or convergence, of the eyes. In the other the crystalline lens changes its shape, accommodating itself to focus for the change in distance of the object. This takes place in the following manner.

When the ciliary muscle contracts similarly to the circular muscle of the mouth in pouting, the fabric of fibers in which the lens is set becomes relaxed and the lens bulges out and becomes more globular. When, on the other hand, this muscle relaxes, as the mouth muscle does in an open smile, the fibers tauten and make the lens flatten out. By becoming rounder the lens acts like a magnifying glass and brings the rays to a

focus at a point nearer than that at which they otherwise would meet. When the lens becomes flatter, the rays meet at a farther point.

The power of accommodation is greatest in youth. As one grows older and the lens becomes less elastic, the power of accommodation is correspondingly reduced. In most persons it is entirely lost after the age of 55.

Near vision is that employed for reading, sewing and other tasks within close range of the eyes. The standard distance for near vision is 14 inches from the eyes. Up to the age of about 45 the normal far-sighted eye should be readily usable for reading and sewing. After that age most persons, because their power of accommodation is reduced, require glasses for near work. In testing for near vision each eye is examined separately in a good light.

The eyes not only have the power of adjustment for distant and near objects but also have a compass of vision. When looking straight forward and without moving the eyes or the head, one can see a certain distance upward and downward, to the right and to the left. The area in space fronting the eye when so looking is called the visual field. In some species the visual fields of the two eyes are distinct; that is, there is one field on each side. In man, because the eyes are placed forward, the visual fields are in front; they are two horizontal, egg-shaped areas with the ends overlapping across the nose. The sense of depth and perspective is given by the overlapping.

Central or Direct Vision Is Sharpest

Central or direct vision is sharpest because the most sensitive part of the retina is used for this purpose. Peripheral or indirect vision is that coming from the outskirts of the visual field and is less sharp because the less sensitive side parts of the retina come into play here. However, it offers a larger visual command of the surroundings and is important for the apprehension of moving objects coming from the side.

It may be asked how it is that only one image is seen, when each eye receives a separate image of the same object. Indeed it would be rather confusing to see two images. Imagine the bewilderment which would ensue if one were about to enter a house and two identical doorways presented themselves! To avoid that confusion, the two eyes must, first of all, work together on the principle, "Whither thou goest, I will go." No matter in what direction the eyes turn, the two, normally, always move together. In this way the two separate images are formed on the identically corresponding spot on the retina of each eye.

Another thing is important; the images must be seen as one in the brain. To this end the brain possesses a fusion faculty by virtue of its interconnections. This faculty of fusing the images is often late in developing and is sometimes rather imperfect.

Various Areas Register Separate Colors

Objects are distinguished by the form sense. One way of qualifying them is by the color sense. In origin, color depends on the wave length of light. Various parts of the visual fields are attuned to particular wave lengths; hence they testify to separate colors. The entire area of the visual field recognizes form. The colors, blue, red and green, occupy smaller areas within the boundaries of the form field. An approximate idea of the arrangement and relative proportions of the several color areas in the visual field could be obtained by using a silver dollar for the white or form field. On top of this could be placed a half-dollar representing the blue; on that a quarter for the red field, and on that a 5 cent piece for green.

The color sense is tested with colored yarns; for example, pale green, light pink and bright red. These are to be matched with identical colors and with confusion colors, such as yellow, brown, pale blue, violet and mauve.

A person is red blind if he includes blue or violet in matching pink, or green and brown to match red; he is green blind if he selects green and gray to match pink, or lighter shades of green or gray to match green.

[NOTE.—In the October HYGEIA, Dr. Cohen's discussion will deal with "The Eye Has Its Troubles: Optical Defects."]

Coins, superimposed, approximate the color areas of the visual field.

A Housewife Looks at the Committee on Foods

By Doris W. McCray

XII. *Committee Acceptance of Biscuit Mixes*

THE BISCUIT MIX is a comparatively new product in the grocery store; it is a biscuit mixture of flour, vegetable shortening, sugar, skim milk powder, baking powder and salt, requiring only the addition of milk or water for making biscuit dough. Ingredients are carefully weighed and blended in the biscuit mix, so that a little, inexperienced girl can produce light, tender biscuits from it.

Some one has aptly remarked that if bread is the staff of life, then crisp, brown biscuits are assuredly a gold headed walking cane! School days bring the need for simple, nourishing food that is quickly prepared and acceptable to the child. Biscuits have a strong gustatory appeal to school children of all ages.

A mother wants assurance that a food is wholesome, clean and nutritious. She looks on the package for the Seal of Acceptance of the Committee on Foods of the American Medical Association; and if she finds it, she feels assured that the product is wholesome and that the claims truthfully represent the quality. Absence of the Seal from the package indicates that the manufacturer has not yet alined himself with those food manufacturers who look to an authoritative group of scientists for guidance on the proper nutritional values of foods.

Applications Are Constantly Increasing

The process of acceptance is rather tedious and lengthy because each member of the Committee must review the material submitted by a manufacturer. Because of the thoroughness of the work, only about 600 submissions a year have been considered, although a considerably greater number of applications for acceptance are received. Requests for the outline of procedure for submitting foods number in the hundreds. To date, 2,543 products have been submitted to the Committee on Foods of the American Medical Association, and of this number, 1,856 have been accepted and 80 rejected.

Without remuneration, the members of the Committe on Foods have conscientiously given of their time, knowledge and experience for the good of the public. Members of this Committee are appointed by the Board of Trustees of the American Medical Association. As the work develops, more and more attention is being given to questions of special and direct concern to the good nutrition and the health of the public, as well as to the routine acceptance of meritorious foods.

No Biscuit Mixes Have as Yet Been Rejected

To date, there have been no rejections of biscuit mixes. The Committee on Foods considers the purity and wholesomeness of the flour, shortening, sugar, salt, leavening and dried skim milk that go into the biscuit mix, which is sometimes called a biscuit flour although it contains more ingredients than flour alone.

The Committee considers that such a product should reach the housewife in good condition; and to that end, manufacturers have carried on considerable experimental work to select a shortening that will not turn rancid when stored in a warm room. Biscuit mixes of a number of years ago developed rancidity rather quickly and were therefore commercially unsuccessful. The special vegetable shortening now used withstands long periods of storage without developing rancidity. A waxed paper envelope inside the paper carton prevents absorption of excess moisture when humidity in the storage room is high. The Committee requires all information that will be helpful for a proper decision on submitted biscuit mixes.

One package is submitted to each member of the Committee for testing the product and for consideration of whether or not the package label is truthful and properly informative. One copy of every piece of advertising matter is also submitted to each member of the Committee. All advertising claims must be substantiated by fact and in keeping with the Committee's requirements for good advertising. The principal claim for a ready prepared biscuit mix is

that it will produce good biscuits and will save time for the housewife. It is easy to prove that claim simply by baking the biscuits.

Housewives are looking for shorter and easier methods of cooking; they want surer and more accurate results. The oven heat regulator solved an important baking problem, but there is still the problem of measuring and mixing ingredients. The family of "mixes" solves this problem; in addition to the biscuit mix, one may obtain a bran muffin mix, a devil's food cake mix, a spice cake mix and other mixes which require only the addition of liquid to produce batter or dough ready for layer cakes, pies, cookies, griddle cakes, muffins, gems or doughnuts. These products are more accurately mixed in the factory than would be possible with equipment in the home, and they free the housewife's time for other details of homemaking and for necessary rest and recreation. A home-baked product is characterized by a delicious aroma and freshness.

Biscuits possess the great asset of palatability. Butter, honey, Philadelphia cream cheese and other nutritious foods combine well with biscuits, and biscuit sandwiches can be made with a variety of fillings. The nutritional value of biscuits alone is similar to that of bread, although the biscuits have a higher fat content.

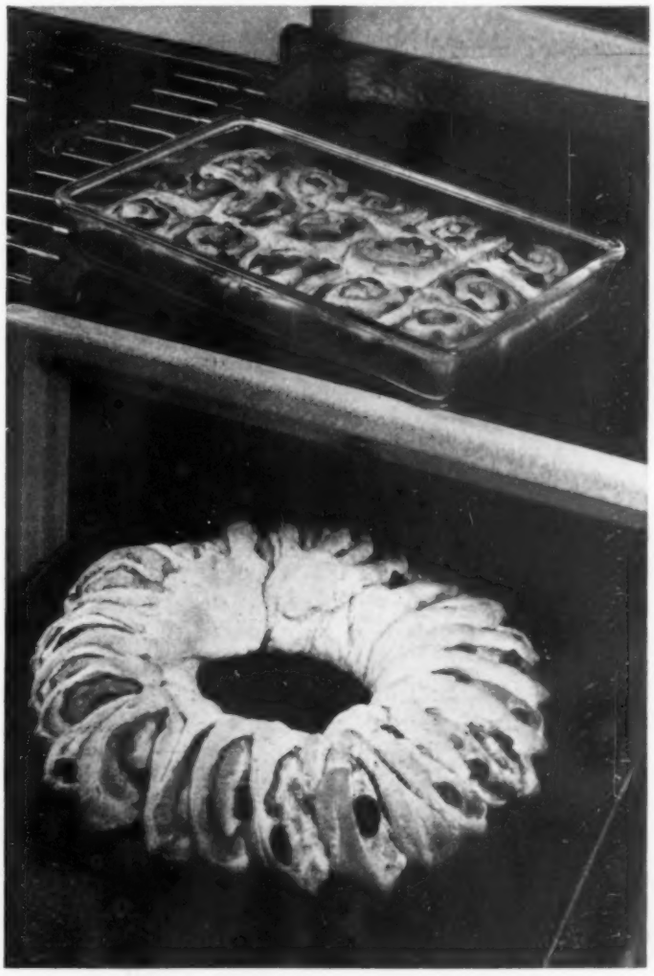
The simplest, cheapest and most effective way to improve the quality of bread is to introduce more milk solids into its composition; this can be done most easily in the biscuit mixes. Dried skimmed milk in the mix is important, but the calcium content of the finished biscuits may be increased by the addition of milk instead of water in preparing the dough for the oven. Biscuits supply mainly carbohydrate, with the natural mineral and protein constituents of the flour. A biscuit sandwich, an apple and a glass of milk constitute a balanced after-school lunch for the active child who likes to snatch a bite before he runs outdoors to play.

Good Biscuits Are Good for School Child

In order to keep the growing school child's body up to the optimum weight, it is important to supply appetizing, nourishing food. An adequate breakfast, a well balanced noon luncheon and another well planned meal in the evening are needed. Biscuits are wholesome and nutritious for the school child when they are properly made and baked.

Fresh bread, in itself, is not indigestible, but there is a tendency to swallow it without proper mastication and mixing with saliva which contains an enzyme that begins starch digestion. Thoroughly baked biscuits, golden brown on top, bottom and sides, and flaky white inside, should be turned out on a wire cake cooler or rack to aerate and cool slightly. When eaten, the hot biscuit has a tendency to pack together into a doughy mass; if it is first cooled slightly, the cell walls become firm with air spaces between. The leavened bread is better suited to children. The large proportion of crisp brown surface is wholesome; in this surface some of the wheat flour has been dextrinized by the heat of the oven.

The Federal Food and Drugs Act requires that the package label of foods shall carry no false or misleading statements and that it shall bear such information as may be required by the sections defining adulteration and misbranding. The label must give the net weight or volume of contents. The names of the manufacturer and place of manufacture need not be given, but if the names are stated, they must be those of the actual manufacturer or producer and place of manufacture. The constituents of biscuit mixes are flour, shortening, sugar (sucrose), salt and dried skimmed milk, with soda and phosphate for leavening. It is not necessary for the label to state the kind of shortening used. Some of the labels include information as to the kind of flour used; if the flour is bleached, the label should declare this fact. As carried on at the present time, the bleaching of flour is entirely harmless. As a regular part of the submission of a flour, the Committee on Foods



Cinnamon rolls and tea rings may be made from biscuit mixes.

John Barry, Jr.

A little school girl can make tender, light biscuits with a biscuit mix.

of the American Medical Association requires information on the type and quantity of bleaching or maturing agents used for each barrel of flour.

Most mixtures contain cottonseed oil as a shortening. The modern methods of refining and hydrogenation of cottonseed oil make it easy to store for a reasonable time, even in a warm room, without becoming rancid. One accepted biscuit mix contains sesame oil, which was found to be best before the present methods of refining cottonseed oil were developed. The hydrogenation of cottonseed oil modifies its composition in such a way that the shortening will not become rancid easily. In other words, hydrogenated cottonseed oil possesses excellent keeping qualities, entirely satisfactory for the manufacture of biscuit mixes.

Information given on the package includes the warning to add nothing but milk or water. Do not add baking powder or salt. For a rich shortcake, additional shortening may be cut into the dry biscuit mix with a fork. However, I made satisfactory shortcake without the addition of extra fat; a little sugar can be added, although it is not necessary if the fruit is well sweetened.

The directions on one package read, "Do not sift." When a biscuit mix has been mixed together thoroughly in the mechanical mixer and possibly sifted afterward, sifting in the home is unnecessary and may clog up the small household sifter.

Measure the biscuit mix in a standard ½ pint measuring cup, and level off the top. Do not shake the mix down or pack it into the cup. When milk is used instead of water, the amount of liquid required is slightly larger. Add the liquid to the measured biscuit mix all at one time; beat hard for one-half minute to make the dough tighten up enough so that it may be handled; turn onto a well floured board, preferably one that is covered with heavy canvas rubbed well with flour. Round the mass up, fold it over three times and roll it out lightly with a rolling pin to about ½ inch in thickness. Some directions suggest a quick, light one-half minute kneading on the board in place of the one-half minute beating in the bowl. Cut with a floured biscuit cutter. The time from package to oven is from one and one-half to two minutes. The cut biscuits are laid on an ungreased flat baking sheet or on one that is lightly greased. The tops of the biscuits may be brushed with melted butter or with milk before baking, but this is not necessary. The oven should be about 450 F., or hot enough to bake and to brown the biscuits quickly. From nine to fifteen minutes is all the time that should be necessary, depending on the diameter and the thickness of the biscuits. The dough may be mixed a trifle softer, beaten well and pushed from the end of a spoon with a knife to form mounds or drop biscuits, on the baking sheet. Rolling pin and molding board or canvas cover are unnecessary if there is a piece of parchment paper or waxed paper or an enamel topped table where the dough can be flattened out to the desired thickness for cutting the biscuits.

Accurate Weighing Makes Mixes Dependable

Great accuracy is possible in the manufacture of a biscuit mix prepared in quantities of 1,000 pounds or more. Each ingredient is weighed on a scale, which weighs accurately to a fraction of an ounce, and the weights are checked. Ingredients are never measured by volume as in the home. The ingredients are then mixed by machine, which blends the shortening into the flour much more thoroughly than can be done by hand. Each batch is tested by baking before it is put into the package. Materials must be of the best because the biscuit mix is used mostly by inexperienced biscuit bakers in the larger communities, although skilled biscuit bakers are finding that they cannot duplicate the consistently high quality of the product turned out by the machine mixer.

Considerable effort has been expended by the manufacturers to develop biscuit mixes that will

produce fine, white biscuits with a tender, flaky body. The ability of mixes to withstand adverse conditions of temperature and humidity in storage has also received considerable attention. Storage tests made over a period of two years on one brand of biscuit flour indicated that refrigerator temperatures are not necessary. However, it is common knowledge that high temperatures and high relative humidity greatly accelerate rancidity in any food product. A tight package with an inner bag and an outer paraffin wrapper prevents any adverse effects that might be caused by the humidity of the atmosphere.

Keeping Qualities Tested by Incubation

Keeping qualities of one brand of biscuit mix are tested by incubating it in an electric oven which maintains a temperature most suitable to the development of rancidity. By making careful records of the number of hours and by using empirical data, it can be ascertained within close limits how many months the shortening in the biscuit mix will keep when exposed to the normal conditions found in the grocery store and on the housewives' pantry shelves. Various vegetable shortenings that keep in a satisfactory manner have been developed.

There is a somewhat larger percentage of shortening used in a biscuit mix than is recommended for the average household recipe for biscuits. One manufacturer told me that the shortening used in his product is incorporated in chromium plated mixers and the finished product goes through a rebolting system to make sure that it does not contain any lumps.

A specially designed mixing machine is used for preparing the biscuit mixes. The exact number of minutes for mixing to obtain a homogeneous mixture has been figured out by testing, and this schedule is followed with each batch prepared. Such a product may be harmed by overmixing, but an absolutely homogeneous product should be obtained. The large mechanical mixer blends the ingredients in a manner impossible to duplicate in the home. In the home it is an easy matter to forget the number of teaspoonfuls of baking powder and to put in too much or too little, especially if school children are discussing their many activities and interests with mother while she cooks. Baking powder or leavening cannot be measured so accurately by teaspoonfuls as it can be weighed by pounds, and it can be more economically purchased by the milling company than by the housewife. For some self rising biscuit mixes a carefully balanced formula is worked out so that if the biscuits are shaped and put into the refrigerator the mixes will retain their leavening properties until they are baked.

The leavening agents commonly used in a biscuit mix are sodium bicarbonate and a mixture of calcium acid phosphate and sodium pyrophosphate, carefully proportioned so as to release carbon dioxide or leavening gas from the baking soda at the desired rate to insure light, fluffy biscuits.

Chosen flours with definite baking characteristics are blended to give the result desired in the finished biscuit mix, so far as flavor, body and strength are concerned. Fineness and tenderness of texture with full, rich, wheat flavor are desired along with sufficient strength to allow the protein of the flour to expand and to retain the leavening gas.

One manufacturer states that winter and spring wheat flours are so blended as to yield a mixture of desired viscosity and percentage and strength of gluten.

Less dried skimmed milk is used in the formula for a biscuit mix than if milk were used in the liquid state in the home, because of the fact that an excessive milk solid content imparts toughness to the biscuits. Milk can be added in the home if desired, but this is not necessary to produce fine biscuits from the mixes.

Dried skimmed milk, as used in the manufacture of biscuit mixes, is the product resulting from the removal of water from skimmed milk; it contains not more than 5 per cent moisture. It is hardly necessary to mention that all ingredients and equipment are kept scrupulously clean.

The utmost care is taken to insure the cleanliness of the mixing room and of all machines. From the time the various ingredients are mixed until they reach the sealed package, the mix is not touched by hand. If there is any doubt as to whether the product is absolutely clean, acceptance of the Committee on Foods is withheld. Considerable research, testing and constant care are exerted to insure uniformity.

No Fee Connected with Committee Decisions

Any product may be submitted, without cost, to the Committee on Foods of the American Medical Association for consideration, and acceptance is possible provided the product, the method of manufacture and the advertising claims warrant such acceptance. Many products have not received such acceptance; therefore the question of whether or not the products and the advertising comply with the requirements of the Committee must remain doubtful.

In order to bring before the public the nutritional value of bread and other wheat products, an extensive advertising program is being carried on by millers and bakers. This program is being conducted along highly ethical lines, and the Seal of Acceptance of the Committee on Foods appears frequently in connection with accepted brands of flour and bread. Increased sales follow such advertising programs, and it is wise to bring before the public at this time the nutritional advantages of such simple, wholesome, easily digested foods as bread and other products of wheat flours.

The Committee on Foods of the American Medical Association has authorized publication of the following general Committee decision:

Educational food advertising presenting scientific information on the nutritional or physiologic values of foods is frequently artfully misleading and insidiously deceptive. Educational advertising should be truthfully informative to its intended hearers or readers, and expressed in simple language. Facts should be so stated as to avoid misinterpretation or misunderstanding. Special experience and training are necessary to interpret scientific findings and translate them into everyday terms. Appropriate explanations or pertinent information should accompany scientific statements whenever necessary to assure their correct interpretation. A primary duty of sponsors and writers of educational advertising is to make certain that all statements are not only truthful but will be thoroughly and properly understood.

Educational advertising should properly evaluate foods with respect to those common on the market and to the requirements of an adequate diet. Exaggeration or implication that all the nutritive values reside in a single food or any undue emphasis on the nutritional or physiologic values of any one food is a form of deception.

It is proper to advertise foods in such a way as to show their content of nutritional essentials. It is proper also to indicate any unique physiologic property if such can be proved by adequate evidence. Foods vary in their nutritional contributions to a complete diet and must be intelligently selected to provide a balanced dietary or correct an inappropriate regimen. Foods which will supply some nutrient essential or property not easily secured from common foods have especial value because of the substance or property they supply and not because of any inherent mysterious health values.

Appropriate experience and training in food chemistry, nutrition and physiology are necessary qualifications for preparing proper and truthful educational advertising for foods. Such advertising should be carefully phrased that it may not prove misleading to persons whose knowledge of those subjects is limited. Educational advertising untruthful in its implications misleads both the public and the food trade to their mutual harm. It is especially desirable that reports on the scientific investigation of foods intended for advertising propaganda present the findings in such manner and with such interpretations that they do not distort the truth or give a one-sided view of it. Thus they will best serve the public as well as advertising agencies and the food trade.

It is the essential purpose of the Committee on Foods to aid the food industries to attain newer and higher planes of merchandising and thereby to serve public welfare better. The trade is by no means unappreciative. The many letters of gratitude and commendation from the trade show that it recognizes the spirit of the Committee and is gladly willing to carry through with it to the ultimate goal.

The Committee is developing a new and enlarged concept of the nutritional values of merchandised foods and of the scope and character of food advertising in the interest of public welfare and health. It is defining the principles that should govern food composition and advertising. These principles, once defined, become diffused through the food and advertising trades and will become the recognized codes of food merchandising and ad- *(Continued on page 858)*

The Ann J. Kellogg School

(*Continued from page 823*)

the second floor is partitioned into two playrooms. Viewed from one classroom, this house presents an Old English front decorated with "gingerbread," while from the other classroom it has the front of a French house. A second equally beautiful and similar suite has a Spanish house on one side and a Colonial front on the other.

The junior high school offers the usual fundamental or integrating courses. Its "finding" and "exploratory" courses include general science, junior business, general language, general shop, home-making and vocation. They are designed to discover the children's respective aptitudes, interests and abilities and to make occupational and educational guidance possible and practical.

Enrolment in a special class does not necessarily mean total or even partial segregation. Assignment is made strictly on the merits of the case. The administration of the school has been made so flexible that any child may receive the benefits of any one or more of the departments or special classes of which he is in need. In other words, the Ann J. Kellogg School puts forth every effort possible to make any and all adjustments that are necessary to the welfare of each of its pupils.

Dr. H. E. Barnard, director of the White House Conference on Child Health and Protection, said at the dedication of the school:

This is a new and intelligent approach to a consideration of the problems of the children, who in one way or another deviate from the normal type. Here there is a new focusing of the educational vision, less upon methods and books, report cards, and diplomas, than upon the plastic, dynamic, highly vital human child himself. In this school, education becomes corrective as well as preparatory. The handicapped child marches side by side with the normal child. . . . If all these citizens of the nation carry out in action the philosophy on which this school is conducted, we shall face the future with confidence.

AMBROSE O'PSHAW, *Detective*

Chapter I

By NELLIE G. HERRIMAN

ANY ONE who has lived in the land of So-So or who has ever passed through the country has heard of Ambrose O'Pshaw, the great detective. Many a traveler has gone a little out of his way to pass the famous man's house, which is snuggled among the trees at the bend in the road, just before one comes to the bridge. It was an extremely cozy little house, just as Ambrose was an extremely clever little detective.

But those who know say that Ambrose was not always a detective. At first he was known among the people of the village as The Thinker. He had done well at his books in school and had come to believe that a fine brain was the best thing to be had. So when he was graduated from his lessons, he told his friends that he had decided to devote his life to thought.

To them this sounded fine and elegant. As they went about their busy ways, they liked to peep in at his door to watch him thinking. On warm days he sat on his door-step and thought, while the passers-by stared at him and told one another how very wise he must be. He looked as if he were pondering about wonderful things, such as the kind of cheese that would make the brightest moon or whether the sky would be higher if the earth were lower. Yes, indeed, Mr. O'Pshaw was a great scholar.

After a while the people began to smile behind their hands when they walked past his home, for frequently they saw that his long chin had fallen on his breast, and he was snoring gently. In fact, so much of his thinking turned into sleeping that his home fell into a state of disrepair. The roof was crumbled, the windows were broken, and the door was hanging by one hinge. The house looked as though it had been painted red long ago, but now the paint was almost gone. The garden needed repair quite as badly as the house did. Weeds and grass had grown high, even in the path, and the bird house was falling to pieces on its post. As Ambrose sat and thought or slept, he too became ragged and dingy; his clothes needed mending, his shoes were dull, and his dark hair had grown down on his collar. He and his home fitted one another exactly.

On the day that my story begins, Ambrose was standing on the walk and gazing up at the house.

"Ah, I see where the rain came in on my bed last night," he murmured, stroking his chin. "Another window pane is missing. I must mend it immediately, for I should not like to sleep in a shower every night. The rain on my nose was really quite annoying, although I must admit that at first it was refreshing. Oh hum! I must take a coin into the village and fetch home a new pane. It is really quite a nuisance, for I am most fatigued from the great thoughts I have been thinking. Oh pshaw! I wish I might be able to afford an errand boy to attend to these small chores for me!"

He strolled into the house and went to the cupboard in the corner. He moved three cups, a bottle of ink, a handful of nails, a glass of jelly and a spool of thread.

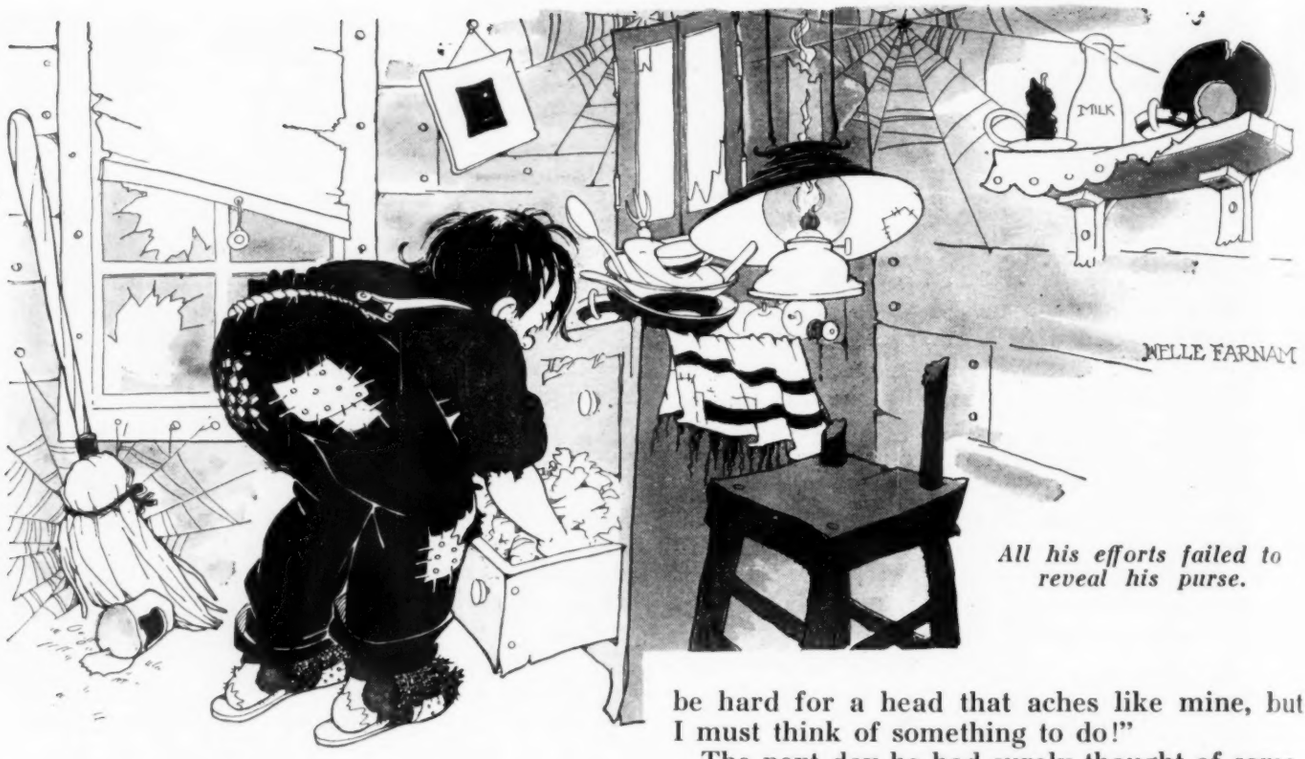
"Oh pshaw!" he said. "I thought I left my purse here in the cupboard, but it seems I am mistaken. Hmm! Where can it be? Ah, under my pillow, I've no doubt!"

Going into the little bedroom, he rummaged about in the tangle of blankets on his bed, finding his pillow and the crusts of his last evening's sandwich but no purse.

"Oh pshaw! Now where did I mislay it?" he thought. "Ah well, I shall look for it; there is plenty of time."

So he went about the house, turning things over. The appearance of the rooms was a little

So much of his thinking turned into sleeping that his home fell into disrepair.



All his efforts failed to reveal his purse.

improved by the search, for many things that had been wrong side up were thus straightened again. However, all his efforts failed to reveal the purse.

"If I didn't have this frightful headache, I should probably be able to remember where I put the purse last," he thought. "It seems that my head aches a great deal of the time. Well, I shall brew me a pot of tea; perhaps it will revive me."

He could not find his tea kettle in the piles of pots, pans and dirty dishes that covered the kitchen table and the sink, so he put a bit of water in a frying pan and set it on the stove to heat. A long search brought forth a small package of tea and an empty sugar bowl. No sugar? Well, he could take his tea without sugar. At last the water boiled, and he brought down the tea pot from the shelf.

Something inside the pot rattled. Ambrose removed the lid and peered within. Then he reached in with his long fingers and triumphantly brought forth a coin.

"Ah, now I remember!" he said. "I used my leather purse to mend my shoe, and put my money into the tea pot for safe keeping." He reached into the pot again and even turned it up and shook it, but no more coins were there. "Oh pshaw! Is this all the money I have?"

With a worried frown he made his tea. He drank it slowly, sitting on the steps, but he did not enjoy it. A little thought was dancing about in his head and tormenting him wofully. "Just a penny! Just a penny! Just a penny!"

"What shall I do?" he cried. "I shall soon starve with only a penny between me and the cruel world. What shall I do? Thinking will be hard for a head that aches like mine, but I must think of something to do!"

The next day he had surely thought of something, for he was busily pounding on the front porch when his neighbor, Robin Grabpenny, drove past the house.

"Humph!" grunted Mr. Grabpenny. "It looks as if Ambrose were mending his house. I never knew him to do that before! He must have come into money. I'll have to find out." He pulled his thin white horse to a pause and called, "Good morning, Thinker! You seem to be very busy this morning!"

"Indeed, I am busy," Ambrose agreed, wiping his streaming face. "I am building a sign, for I am going into business." He drove a nail crookedly into a board.

"Eh? What?" gasped Mr. Grabpenny, his eyes big and round with astonishment. The horse thought he had been urged to go ahead, so he started off, with Mr. Grabpenny staring back at the O'Pshaw house in amazement. When the horse and cart disappeared around the bend, the driver was still leaning over the back of the seat with his mouth wide open.

When he reached the village, Mr. Grabpenny hurried from house to house, telling the good people the startling news. Ambrose O'Pshaw was going to work, he told them; Ambrose O'Pshaw was going to work. All around the town the news flashed. Ambrose O'Pshaw was going to work! Some of the people shook their heads and muttered that Mr. Grabpenny, who had always been somewhat queer, was surely losing his mind. Others held their sides and laughed. Ha ha ha! Whoever would have thought that Mr. Grabpenny could make a joke? Indeed, perhaps the reason he had been so solemn and stern all these years was because he was planning this one joke.

That day many of the good people invented excuses to pass the O'Pshaw house. The serious ones thought they had better see at once whether Mr. Grabpenny was really losing his mind, and the jolly ones hoped that the joke would be richer if they could gaze at the object of it.

When they reached the O'Pshaw house, the people stopped and stared. They nudged one another and, whispering behind their hands, pointed to the door-post. Some rubbed their eyes as if they could not believe what they were seeing, then rubbed them again to make sure that they had not been deceived the second time they looked.

Mr. O'Pshaw's house did look most unusual, for on the door-post, looking very clean and fresh against the soiled paint, was a neat sign which read thus:

AMBROSE O'PSHAW
DETECTIVE
I SOLVE TROUBLES

Ambrose was peeping from behind his ragged curtain, overjoyed at the attention his sign had attracted.

"How fine it will be," he was thinking, "to be a great detective, honored and respected by all the countryside. I never dreamed that surprising the people could be such fun. Just see their eyes pop!"

At that moment he was startled by a loud burst of laughter.

"Ha ha ha!" shouted the cluster of villagers, who had gathered at his gate. "Haw haw haw! He he he!" They clapped one another on the back and roared, or leaned weakly against the rickety fence and giggled, while poor Ambrose watched in dismay.

What could be the matter? Was the sign upside down? He shifted from foot to foot, wishing they would stop laughing and go away so that he could go out and see what had caused their amusement. But the crowd did not go away, nor did it stop laughing. In fact, it laughed louder and beckoned to newcomers to hurry and join the fun.

At last the miserable detective could stand it no longer. He crept out of the back door and followed the path around the house, hoping the people would not suspect that he had been watching. Most of the villagers tried to straighten their faces when they saw him coming, but a few giggles escaped from behind their hands in spite of them.

"Good day, neighbors!" said Ambrose, his face red and hot.

"Good day, Mr. O'Pshaw!"

"You have been looking at my sign, I see," said Ambrose, gazing at it and seeing nothing wrong. "Don't you think it looks very nice?"

"Yes, it is a nice sign," agreed Sally Suds, the village washerwoman. "It looks very nice, indeed, against the dirty walls of your porch."

Ambrose did not like her reply. He turned to the man on the other side. "I hope you will have business for me," he said. "I am known as a great thinker, so I'm sure I can solve your troubles with little trouble."

The man looked at him and shook his head. "I'm sorry, but I'm afraid you would not be able to help me."

"Have you no troubles?" Ambrose asked.

"Many of them, but I'm sure you could not help me solve them, since you have not solved your own!" said the man, rather sharply.

"What do you mean?" Ambrose stared at him with puzzled eyes. "I have no troubles!"

"If you think that, you are neither a thinker nor a detective." The man turned away rudely and walked toward the village, followed by the snickering crowd.

Ambrose stood in the road alone, feeling sorry for himself. "If people only knew how tired I am and how my poor head aches and aches! I'll starve here all by myself, but they will never have another chance to laugh at me!"

He tore the sign from the post and carried it into the house. Dropping it on the floor, he threw himself across his bed and was soon fast asleep. When he awoke, the sun was shining brightly and the neighbors' chickens were crowing lustily. He had slept all night.

He lay at his ease for several minutes, until his stomach informed him that he was hungry. He arose, smoothed his wrinkled clothing a bit and went toward the kitchen. The sign stared at him from the floor. He took it up and turned its face to the wall.

As he searched for a bit of breakfast he remembered that his cupboard and purse were

He tripped and lost his balance, and there was a huge splash.

both empty. He was extremely hungry, and he became hungrier as he thought about it. His eyes fell on the sign again.

"I'm sure I would have made a fine detective," he mourned. "Of course, I haven't been thinking so well lately, but no doubt that was because of my headache. Besides, I don't like to think about starving. Perhaps the next people who pass will not be so cruel as the villagers. I'll put up the sign again."

By noon the sign was on the post again, and Ambrose watched the road with anxious eyes. No one stopped to read his sign that day or the next, and the detective became quite uneasy. He found some berries in his overgrown garden, and a kind neighbor sent him a loaf of freshly baked bread; but he knew these would not last long. There was nothing before him but a dismal future, and of course he couldn't eat that. He lay in the shade of the tree and stared hungrily at the road.

Then he saw a woman pause at the gate and read the sign carefully. He lay still, partly hidden by the tall weeds.

"Oh, I hope she won't laugh!" he whispered. "I hope she won't laugh!"

The woman put down her heavy basket and opened the gate. She hesitated and looked about, taking in the shabby house, the weeds, and the dirty shirt that flapped on the line. Ambrose moved a little, and she looked at him. Then, strangely, she threw her apron over her head and began to weep.

Mr. O'Pshaw hurried to her side. "I am Ambrose O'Pshaw, the detective," he said quickly. "You seem to be in distress. Please let me help you. I am a solver of troubles, and my fee will be very small."

The plump little woman wiped the tears from her rosy cheeks and shook her head. "I heard about your sign, and I came this way to market with my butter and eggs, hoping you could help me. Indeed I am in great trouble; but when I reached your gate I knew you could not possibly help me, and my long journey is wasted. I thank you for your kindness, but now I must be going. Good day, Mr. O'Pshaw!"

Ambrose hurried after her as she started away.

"Why can't I help you?" he cried. "I am a great thinker and will do my best. At least tell me who you are and what is troubling you."

"I will tell you, of course, since you are so eager," she said, "but I am certain it will be of no use. You see, it is this way: I have one son, whom I consider the finest boy in the world. He is all I have. I have tried to bring him up in the right way, but just lately I have been almost ill because of worry. He has become fond of the pigs which I keep in a pen, and he lies in the shade with them all day long. He will not work; he will not keep himself clean. He does not even use the words I taught him so carefully. When I speak to him, he rolls his eyes at me and grunts like a pig. Oh, it is too terrible!"

"A sad case, indeed," Ambrose said. "But if you will put it in my hands, it will be solved in a short time. Tell me your name, and let me come and study the case."

"My name is Mrs. Merrywell, and I live on Mayflower Road; but I am sure you cannot solve my trouble. I wish that you could help me. Oh, how I wish it, but it is of no use. I must search for somebody else."

"Why can't I help you?" Mr. O'Pshaw pleaded. "Tell me why I can't!"

She looked at him with embarrassed blue eyes, then hurried off toward the village.

"What can be the matter?" Ambrose groaned. "The villagers laughed at me and my sign, and she broke down and cried. Something is wrong! Why was she so certain I could not help her?"

Almost ill with worry, he buried his face in his hands and stumbled toward the house. Since he had his eyes covered, he could not see where he was going. He tripped and lost his balance, and there was a huge splash. The little detective gasped as cold water closed over his head. He had fallen into the large wooden tub under the eaves-spout, which was full of water from the recent rains.

Ambrose scrambled out of the tub and shook himself free of some of the water that drenched his clothing and skin.

"Oh pshaw," he exclaimed. "I hope I did not splash away all that nice clean water. I might want to wash something some day."

He turned and looked into the tub. Much of the water was left, but he stared at it strangely. Then he went down on his knees and stared some more.

"It's muddy!" He whispered. "It's muddy! How did it become muddy?"

Truly, the water was muddy. It had been clear and clean, but now it was muddy! The bewildered detective ran his hand over his chin and then happened to look at the hand. Little ripples of brown water ran from it. A dark stain across the palm reminded him of a July storm cloud.

"Why, why, I'm d-dirty!" Mr. O'Pshaw stammered. "Just as dirty as a—as dirty as a pig!" His eyes became big and staring. "A pig! Just like Mrs. Merrywell's son! Why—why—"

Turning slowly, he gazed at his house, his yard and his dirty shirt on the line as if he had never seen them before. Deep red crept up his neck and turned his face into a shamed scarlet.

"Now, I know," he muttered. "Now, I know!"

Moving unusually fast, he started toward his door, rolling up his dripping sleeves as he went.

"As soon as I have solved my own troubles I shall go to Mayflower Road and see what I can do for Mr. Pig Merrywell!" he said, seizing a broom.

(To be continued)

New Books on Health

LET'S TALK ABOUT YOUR BABY

By H. Kent Tenney, Jr. Cloth. Price, $1.50. Pp. 85. Madison, Wis.: Kilgore Printing Company, 1934.

THIS LITTLE book tells us presumably what a baby thinks about. It has six chapters in each of which the baby tells its mother, either directly or through the doctor, what he would like to have in the way of food, clothing and attention to his personal hygiene. As a result the mother should get much information about vitamins, milk mixtures, feeding, teething, clothing and sleep. The book should make the acquiring of good information a comparatively simple and painless performance for any mother. At the back of the book are a few pages for the baby's picture, a record of its weight and physiologic development. The little book should be a nice gift for any mother of a young baby and may be recommended with confidence to all young mothers.

MORRIS FISHBEIN, M.D.

HEREDITY AND ENVIRONMENT

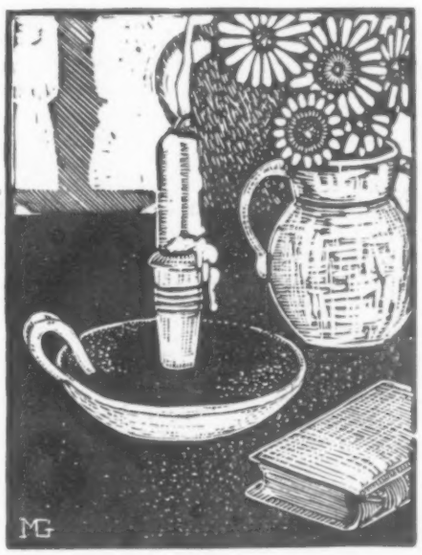
By Gladys C. Schwesinger. Cloth. Price, $4. Pp. 484. New York: The Macmillan Co., 1933.

THE AUTHOR of this book, in attempting to present a compendium of studies on the interaction between heredity and environment in shaping mental development, has created a book of unusual merit. While the book is essentially a reference work on psychologic measurement and a summary of studies on the developmental origins of mental characteristics, it is as comprehensive and clearly written a text on the genesis of psychologic characteristics as there is in print.

No doubt the book with its extensive bibliographic references and critical review of such a vast amount of data will find its greatest usefulness among scientists. It would be unfortunate, however, if it escapes the attention of the intelligent lay reader. There is no subject of greater human interest and none more basically related to social problems than is this one, and in no recent book is the subject presented in such an authoritative and fascinating manner.

The organization of the book is excellent, and material is clearly defined. For simplicity of presentation, the author has arbitrarily discussed the subject from two main standpoints: the intellectual and the temperamental. Discussion and appraisement of the status of measurement in these groupings are given in the first two chapters. Data derived from experimental technics and direct observation are discussed in the following chapters.

Among some of the important facts developed were: (1) the scientific awareness on the part of the psychologist of the need of an experimental approach to the heredity-environment question, (2) the comparative recency of adequate scientific studies, (3) the necessity of future research to devote itself to investigating factors behind variation in individual differences within a group and (4) the



importance of material on identical twins reared apart, the influences of cultural environment on foster children and the significance of heredity in social differentiation.

In conclusion the author devotes a chapter to a summary of the general purpose and content on the book and a valuable and stimulating outline on the fields for future research. The book is valuable to any one interested in social progress. It is a distinct contribution and is highly recommended to the laity as well as to those more specifically concerned with psychologic work.

H. G. PONCHER.

RECREATION FOR GIRLS AND WOMEN

Prepared for the National Recreation Association by Ethel M. Bowers. Cloth. Price, $3. Pp. 425. New York: A. S. Barnes & Co., Inc., 1934.

THIS minutely detailed and carefully outlined work offers to mothers, teachers and leaders who are working with girls and women a practical handbook of physical activities. The completeness of its tables, programs and schedules leaves nothing to the imagination of even a beginner in the field.

The book consists of two major sections, activities and methods, and is based on a balanced program of recreation. This program embraces physical activities, including individual or dual, group and team projects; creative activities including handicraft, music and dramatics; social activities; mental activities, and service activities. A novel plan is followed by describing these activities and the various games most suited to the age groups represented by Betty the Baby (birth to 9 years); Peggy the Preadolescent (9-12 years); Alice the Adolescent (12-17 years); Beatrice the Business Girl (17-30 years) and Ida the Industrial Girl (14-30 years), and Martha the Matron (from 25 years up). The first section of the book also contains suggested general programs for all ages; day camp programs; year-round outdoor programs for school girls, for employed girls and mixed young adult groups, and for mothers and mixed adult and family groups; community center evening programs for girls, women and mixed groups; play day programs; community night programs; clubs, and girls' week.

The second section of the book concerns itself with methods and leadership and is replete with questionnaires, letters, forms, charts and cards to aid in the organization and administration of programs for physical activities. Simple diagrammatic sketches and excellent bibliographies add much to the value of the book.

LEOLA J. HARRIS.

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Looking at the Coming School Year

VACATION days are over. Again the school doors swing open, and millions of children with eager faces turn in their direction. It is an inspiring sight. These children are the America of the future. What they are to be will depend in large measure on the guidance of the school.

What kind of year will they have? In many ways it is hard to predict; so many unexpected things may happen in this shifting world of social and economic reorganization. However, there are some educational values that remain permanent in an age of change. It has become increasingly difficult to guide children vocationally, but there is a general concensus that no matter what the individual may do in adjusting himself to this complex world, health is of primary importance. The National Education Association and the National Congress of Parents and Teachers have adopted officially seven objectives in education. They are believed to be essential if America is to plan to give every child a fair start in life. The first of these objectives is: "A sound mind in a strong and healthy body."

How can teachers be most efficient in promoting the health of their pupils? This question is one that cannot be answered fully here, but there are a few suggestions which every teacher and supervisor of health might well keep in mind. Those who have the opportunity might turn to the special articles which have appeared in the School and Health Department of HYGEIA this year. They have been notable contributions from outstanding leaders in health education. Although the special articles in this number deal specifically with the organization of instruction in the classroom, it might be said that every article has had a direct or an indirect bearing on this problem. As we try to look through the coming school year, let us think over a few of the essentials which the teacher might well consider:

1. Learn as much as you can about the actual health of your pupils. This information may be gained in part from the physical examination by school doctors and school nurses. Family physicians and parents may also contribute information. Teachers themselves may make inventories of conditions such as posture, teeth, weight and growth.

2. Learn as much as you can about the health habits of your pupils. This information may be gained in a variety of ways. Children may be asked to write compositions in which they tell about their hours of sleep, what they had for breakfast and how many times a day they clean their teeth. If the teacher can spare the time, she may work out a checking list and have a personal conference with each pupil. Probably in most cases she will have the class do the checking under her careful guidance.

3. Study the health needs of the community. It may be that one or two community health problems, for example, hookworm, malaria or deficient diet, are exceedingly prominent. The study of community needs should offer many suggestions as to what is to be taught.

4. Study the health needs of individual pupils. If Paul does not clean his teeth or go to a dentist, it will be a real achievement to get these things done during the year.

5. Study the health and sanitation of the school plant. This may be done with the cooperation of the pupils. Lighting, heating, ventilating and seating are among the problems to be studied. Such information offers suggestions as to how the school plant may best be controlled in the interests of health.

6. On the basis of the information already referred to, the teacher may lay out a health program for a number of months or for the year. Such a program will center around the needs of pupils, school and community.

7. Try to find out how much your pupils know about the solution of the problems that you have decided to attack. This requires a knowledge test of some sort. The teacher may get the information she wants by formulating a test of her own or possibly through compositions in the English classes.

If the teacher has done the things suggested under these first seven points, she will have clearly in mind the essentials of the health instruction and training required by her class or school.

8. Make use of situations in the school to teach health. The teacher who is keenly interested in the health of her pupils and knows her objectives will recognize these situations as they arise. Ruth Orgain of the Central State Teachers College, Mt. Pleasant, Mich., contributes a special article about these situations in the School and Health Department this month.

9. Use textbooks and printed material intelligently. The old plan was to study a book religiously from the first page to the last with little or no reference to the practical health problems of the school. The new plan is to make use of textbooks, library books, newspapers and magazines as reference material bearing on the problems to be solved. In these days one hears much about units of work. Too frequently children have gained a scattering knowledge about a great many things and not much about any one thing; for example, children may learn a little here and there about transportation and safety, or they may study transportation from the beginning of American history to the present day with special attention to the varying problems of safety.

10. Integrate health with the school program. Educators today realize that health is connected with every aspect of life and that it is not something to be taught in a particular period fifteen minutes long twice a week. It is involved in the way children sit and stand, in the way they use their eyes and in their regular mode of living. Since healthful living is a part of a social situation, it should naturally come up in the teaching of various school subjects such as history, civics and literature.

11. Cooperate with the home. Since the child spends more time at home than in the school and must eventually leave school, the way he lives at home is of greatest importance. Contact with parents may be brought about by having parents' days, by visiting homes and by joining parent-teacher associations.

12. Measure your results. This does not imply any elaborate technic. It does involve making a few simple records of the behavior of boys and girls.

SOLVING HEALTH EDUCATIONAL PROBLEMS

Organizing Instruction in the Classroom

FIRST STEPS IN HEALTH EDUCATION

MARY MAY WYMAN
Public School Supervisor of Health and Safety Education
LOUISVILLE, KY.

WHAT is the subject matter of health education? What shall the teacher teach? Shall health be taught through other subjects, or shall there be a place on the program for health education? These questions are of interest to every classroom teacher.

The best health education material is found in the children themselves. Children are interested in one another and in themselves. No matter how scientific a course of study in health education is, the point of departure in health education is found in the habits that the children have established. A recommended procedure is to conduct a survey of some type to determine the habits that have been formed, those in the process of formation and those that are lacking. This survey may be formal; the children may keep a record of their health behavior over a period of a week or ten days, or it may be an informal, but nevertheless careful, observation by the teacher of those habits that may readily be observed.

Morning inspection should be a part of the school routine. This inspection not only provides an opportunity for the teacher to observe those children who show any deviation from normal health, but it is the time to ascertain if certain habits fundamental to cleanliness and personal hygiene are being practiced.

Most teachers will find that awards such as stars and ribbons are not essential and that they are a hindrance rather than a help. Few teachers will be able to use, with any degree of success, activities in which one child competes with the other. Most teachers, however, will find that children do enjoy keeping a record of their endeavors so that each can check his progress.

There are many times during the day when the alert teacher may observe the children. How well established is the fundamental habit of covering the cough and the sneeze? How thoroughly do the children wash their hands that get so grimy in the classroom? How wisely do Mary and Johnny and Bill spend their lunch money? What habits are really safety habits? What is bedtime for these children?

Desirable behavior in matters of health is the criterion by which health teaching should be measured. Teachers should admit frankly that certain habits are not established and that greater effort should be made.

Teaching should center around the habits that need the most emphasis. If Miss Brown, fourth grade teacher, finds that her pupils do not have regular bedtimes and that they do not go to bed early enough to get sufficient hours of sleep, she realizes that the desire for rest must be made so strong in the children that parental indifference and ignorance will be overcome. The approach will therefore be spectacular.

Robert Louis Stevenson has a charming poem "North-West Passage," which Miss Brown reads to the class. She reads it several times to the enjoyment of all the children. They discuss the picture in it; they relate similar experiences, and perhaps some write lines of their own. Probably no more is said that day, but on the next day, Miss Brown reads the poem again. "Were you ever afraid to go to bed?" she asks. After the discussion that ensues she says, "Why do we need to sleep?" There may be some answers to the question, but Miss Brown will deviate by showing children how to take the pulse. She will let them jump around and find out for themselves that activity increases the pulse rate and that rest diminishes it. Skilfully she builds the concept that activity tears down and that sleep builds up the body.

Later, some one asks Miss Brown to reread "North-West Passage." The class joins her with the lines they remember. "Would it be fun to have a North-West Passage Club?" asks Miss Brown. Bedtimes are discussed, and the children are referred to books or clippings that tell the hours that children should sleep. Perhaps a chart is made, and on succeeding days, each child who has kept his club pledge may write his name on the chart. Parents begin to wonder about the change in Bill and Jack, and they become enthusiasts of this new club at school, a club that has no formal meetings or procedure.

There are many poems in literature about sleep, and the children enjoy reading them. Interesting accounts of how folks in other lands sleep are found and discussed in class. Miss Brown sends the children searching for pictures about sleep. Through legitimate correlation of literature, reading, the opportunity for oral and written expression, music and other mediums, the children of this class have had opportunity to develop attitudes that have strengthened habits about sleep.

Miss Brown's prescribed program probably demands that a certain amount of time is devoted to health teaching. Such provisions are wise, because where there is one Miss Brown with a health consciousness, there are other teachers who would not teach health if it were left to correlated or integrated activities.

Such health teaching meets an issue squarely. It influences behavior out of school not only for the children but for the adults in the community. It helps children do better the desirable things that they will do in meeting life situations.

Health education frequently does not succeed because teaching programs are planned without beginning with the needs of the children. There is a place for definite health teaching, but such teaching need not be isolated from the other school work. The health lesson may be a reading lesson, or it may be English, or social studies or nature study.

SCHOOLROOM SITUATIONS MAY TEACH HEALTH

RUTH ORGAIN
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IN ORDER to make clear how activities may provide a basis for organizing classroom instruction and how they may be used to develop attitudes, habits and knowledge as well as the physical, mental, emotional and social-moral health of the children, I shall describe and analyze a few situations which commonly occur.

Entering school is an experience to which educators have never given enough serious thought. Entering school may be interpreted in two ways: entering school the first day or entering school every day. Both activities may be used constructively for the children's adjustment. Both present opportunities for making mental hygiene a part of the lives of the children.

A child coming to school for the first time or going into another room to another teacher is helped if he can be given a sense of belonging. This can be done if the teacher takes the time to make him feel welcome, knows his name or makes it her business to learn it then and there, introduces him to other children and shows in a natural way that she really means to be his friend. Who can say what this health law of a sense of belonging may mean physically, mentally, socially and morally to a child? It is known that children thrive on security; this security, begun the first day, can be continued if the teacher sees to it that each day the child is given the opportunity to come alone as much of the way to school as is practicable and that he is greeted by a teacher who exemplifies the rules of good health in its broadest sense in her own personality.

A small, stuffed dog was added to the toys in the dolls' house in a kindergarten. For several mornings the teacher noticed that the dog was placed in bed with the small doll. At a group conference she asked about this. She discovered that some of the children were in the habit of letting their pets sleep with them. By taking time to let the children tell how they slept, by showing and talking about a picture of a child asleep in his own bed, in his own room, with no pet or toy, with windows open and the light out, the teacher built positive attitudes toward sleep.

How does the teacher know the children caught the ideas? She soon observed that the toy dog slept not in the bed with the doll but in its corner. One child said, "When I went to bed, I did not let my cat sleep with me. I put him outside." Another said, "When I went to bed last night, I asked my sister to turn out the light and put up the window so I could get fresh air."

Some children were making scrapbooks. A child who had finished his showed it to the group. As he turned the pages, comments were made concerning each picture. There was a picture of a child getting ready for his bath. He held his wash-cloth, and soap and a towel were near. A comb and tooth-brush could be seen on hooks. The children were led to notice these facts. They talked about baths, about why one should have his own wash-cloth, towel, comb and tooth-brush, and discussed how he should use and care for these.

Later, a boy found a comb, and the comments of the children assured the teacher that discussing and looking at the pictures in the scrapbook had helped the children build right attitudes toward such possessions.

A few children saw a mother hen spread her wing and stretch herself in the sunshine. One of the children thought that something had happened to her, so he ran to the teacher for help. All the children came to see what was wrong. The teacher explained that the hen was taking a sun bath. Interesting comments were given by the children, and as a result of this discussion the children wore their sun suits to school and even placed their paper mats, stuffed with hay, in the sun when they rested in the outdoor school of their kindergarten.

A child who was working at the work-bench made a sign. He said that it was a "stop and go" sign. One of the children suggested that he paint it red on one side and green on the other. The first morning that it was finished, it was suggested that the maker should be the leader when the children went for a walk and should tell them when to go and when to stop with his sign. After this, each day a "traffic cop" was chosen; so every child had an opportunity to learn where to stand as he looked in both directions, when it was safe for individuals and the group to cross a street, how to be a leader of the group and how to follow a leader, and a positive attitude toward policemen and rules, or laws, was developed. On all their trips the children practiced safety rules, and they discussed both the right and the wrong practices, which they observed together and individually. Every opportunity which arose was used to build habits, knowledges and attitudes toward safety.

The realization of the menace of flies and the necessity for swatting the first flies of the season came about in this way. One morning early in spring, a fly was noticed crawling slowly on the window pane. In order that all the children might see it and talk about it, the teacher caught the fly and placed it in a small glass jar. Before sitting down, she said, "Please excuse me for I must wash my hands." When she returned, one of the children said, "Why did you have to wash your hands?" The answer to this question led to a discussion about the breeding of flies, the need of keeping them out of our homes and off our food, and the service one renders by swatting the first flies of the season. This led to the making of fly swatters, and a war against flies was begun not only at school but at home.

The war was carried further when the children found a dead rabbit while they were walking through the woods. The children were interested because they had often seen rabbits bounding through the woods. They soon discovered that "worms" were eating him. The teacher helped them to know that these were maggots, hatched from the eggs of flies. They discussed what might be done to keep all these maggots from becoming flies. They soon discovered that burning was the best method, and they used it.

Later one of the children found a dead robin and persuaded her father to help her burn it so that the flies could not "lay eggs on it and make more flies."

CHILDREN'S DAILY LIVES BASIS FOR TEACHING

MARIAN LAIRD
ASHTABULA, OHIO

ALL REAL teachers in elementary and secondary schools desire to give their pupils the best possible foundation or equipment with which to meet life. All teachers willingly dedicate their services to the children "whose faces are turned toward the light of a new day and who must be prepared to meet a great adventure." A consideration of these thoughts leads one to realize that the teacher faces a great and important responsibility. To meet this responsibility with success, the teacher must be guided by certain fundamental goals and principles.

One essential goal for meeting life's adventure successfully is optimum health for the individual and for society. If teachers hope to guide boys and girls intelligently in health, they must consider many things and perhaps first they must carefully study the individual child. From this study they should try to decide what ideals of health they would have the child hold, what attitudes of health they would have the child feel, what conceptions of health they would have the child acquire, what skills in health they would have the child gain, and what habits of health they would have him develop. It is not likely that these will be the same for all children; they will vary according to the individual needs of the particular group. However, this makes it all the more important that teachers should understand the ideals, attitudes, conceptions, habits and skills desirable in the child's development if their teaching is to be worth the effort. It is important because it serves as a valuable guide for helping boys and girls acquire for themselves a healthful way of life. Such a list helps the teacher to evaluate whether or not classroom procedures are really worth while. Perhaps there is no better illustration of the worth of such a guide than an actual application of it to classroom procedure.

The following incident was recently observed in a classroom and is one that is occurring in a large number of classrooms. The boys and girls were to study breakfasts. They were asked what they should eat for breakfast. One little hand waved in the air, and the child suggested bread. The teacher approved and wrote bread on the board and then asked, "What else should we eat for breakfast?" Not getting an immediate response she changed her question and said, "What did you have for breakfast, Peter?" Peter said, "Cabbage." Whereupon the teacher said, "Cabbage! Oh, I'm sure you didn't have cabbage. One never eats cabbage for breakfast. Adele what did you have for breakfast?" Adele said, "Bread." Not making much headway this way but being a versatile teacher, she again changed her tactics and said, "I'm thinking of a fruit that's good for breakfast. It is round and orange?" Several hands waved in the air and some one volunteered

that the teacher was thinking of an orange, so she wrote orange on the board. The lesson proceeded until orange, cereal, bread or toast, milk and egg were on the board. This model breakfast was discussed and praised by the teacher. She then produced a piece of cardboard and some crayons and suggested that the children make a chart for keeping a record to see how many boys and girls eat a good breakfast. It happened that the children in this group were from homes where the income was limited and the families, in most instances, were large. Furthermore, they were of a nationality not yet used to American foods or methods of cooking. The food most commonly served at breakfast in the homes was bread and coffee.

Consider this lesson in the light of the suggested guide previously mentioned. What ideals are these children acquiring that will aid them in meeting life? It would be hard to name any, but some might say that at least they know what constitutes a good breakfast. No one would question the fact that the menu mentioned in the lesson does furnish much nutriment needed by growing girls and boys.

However, in this case it is doubtful whether this really becomes an ideal since the economic status of the families concerned would not permit so expensive a breakfast. It is doubtful whether the parents could get the foods even at the request of the children since the cost would be inhibitory. Perhaps such an ideal would carry over into adult life and function when they become parents, but the evidence that this is true is not encouraging. More often children follow the familiar example of their parents.

What attitude will the child form toward the lesson? Will it be one that will cause him to strive to change the home practice and to get a good breakfast for himself and his family, or will the conditions in the home cause him to feel that what he has learned in school is not practical? Will the only use he has for that kind of breakfast be to employ that knowledge to satisfy the demands of the teacher? Do children want the social approval of the group? Can they get social approval by putting their name on the record as having the model breakfast when in reality they have not had it or the opportunity of having it? What result will this have on the child's character? Will it be favorable or unfavorable?

These questions are all pertinent in determining whether or not the lesson described is really going to function in the lives of those children. Is it going to serve as a guide to help them choose an adequate dietary under the varied circumstances that life continually places before them, or is it merely putting before them an impossible goal which for the present at least they cannot achieve and which they therefore thrust aside as being useless? Would it be of any value to the teacher to have studied the records of these children and so far as possible to have sized up the situation accordingly? Would it have helped if she had found out what they actually ate for breakfast and had praised them for the good foods? Suppose a child had said he had coffee and bread for breakfast. Could the teacher have found out whether or not the coffee was black, or whether the child had some milk in it and about how much milk, and what kind of milk? Perhaps these children could have been encouraged to squeeze the condensed or evaporated milk can so that they would actually be getting the equivalent of a cup of milk in their coffee. On the whole, bread and milk form quite an adequate diet. Perhaps the teacher could have been influential in supplementing the diet with the needed vitamins by having the midmorning lunch in school either tomato juice or some suitable fresh fruit or vegetable. Really the cabbage which

(Continued on page 854)

To Contributors:—*Although most of the articles in the column "Solving Health Educational Problems" are solicited, the editor of this department will be glad to consider contributions which deal with concrete and practical health education procedure in the school. Articles must not exceed 1,000 words.*

QUESTIONS AND ANSWERS

Superfluous Hair

To the Editor:—I am 21 years old and since I have been 15 or 16 I have had an unreasonably heavy growth of hair on my legs. I like to swim, but it was embarrassing to hear bystanders make remarks. I wanted something more permanent than depilatory creams, so I went to an x-ray specialist and he told me that the hair could be safely removed by the ray. That was last spring, and since that time I have had four light treatments. The hair has thinned considerably and in some places has disappeared altogether. I have been happy with the results but there are a few more areas to be treated where the growth evidently is stronger, or else the rays have not been even. I cannot notice much change in my skin except that in a few places it appears dry and scaly. After bathing and swimming I usually rub a little oil on and this seems to help. Will I have any bad effects from these treatments later? Will my skin become more dry and scaly and is there liable to be some serious impairment within a few years?

G. L. K., Nebraska.

Answer.—The question of treating superfluous hair with the x-rays has long been a troublesome one to answer. In years gone by, many attempts have been made to devise a safe x-ray dose so as to avoid not only immediate but later changes affecting the skin. It has been found impossible to define such a dose that will remove hair and guarantee to the patient no unpleasant skin effects later. It must be understood that these skin manifestations may not occur until years have elapsed since the date of the last treatment. It must also be understood that up to the present time no technic has been devised that can be considered safe. X-ray specialists avoid treatment of all cases where treatment is requested for the removal of superfluous hair only.

The fact that the inquirer's skin appears dry and scaly in a few places warrants the suggestion that he consult a dermatologist at once, as these signs may be the forerunner of more serious trouble. It is impossible, of course, to account for this dryness and scaliness without actually seeing the lesion. It is, therefore, imperative that some one observe these changes at once in order to be able to give further advice.

Dermatologists, as well as radiologists, are quite in accord that electrolysis is the method of choice and a much safer procedure for removing superfluous hair. It is a tedious method and it takes a long time to produce results, but it is devoid of the insidious dangers that follow x-ray treatment.

Canned Fruits and Vegetables

To the Editor:—In buying commercially canned fruits for winter use is it preferable to secure those canned the same season one would use them, that is, would the vitamin or mineral salt content be considerably lessened in fruit 2 or 3 years old? Is there any way by which a customer can tell when the fruit she is buying has been canned or dried? Housewives appreciate what your Committee on Foods is doing for the consumer, but would be pleased if it could also accomplish the service of having each can or package of food dated as to when it was canned or dried so the customer could understand it.

W. H. W., Nebraska.

Answer.—Commercially canned fruits and vegetables of the new pack are usually preferred by buyers, but properly canned fruits and vegetables will keep a long time, and as long as they are not spoiled, there seems to be no reason why they should not be used. The vitamin and mineral contents do not change appreciably in properly canned fruits or vegetables after they have been sealed in the can, except after extremely long storage.

There is probably no way by which the consumer can tell when fruits or vegetables were packed. Manufacturers do have a code or lot number to identify various lots of goods, and they make an effort to dispose of the older pack first. Dating of the can does not seem to be of any particular importance.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Chronic Colds

To the Editor:—Information is desired on prevention of the common cold. I am never free from a cold.

H. A. T., New Jersey.

Answer.—When an individual is never free from a cold, he should be suspicious that perhaps the condition is not a cold at all. Such a state of affairs calls for a comprehensive physical examination by a qualified physician with appropriate treatment following.

Some of the possibilities of diagnosis are chronic sinus infection, incipient tuberculosis or sensitization to foreign protein. The essential first step in identifying the probable cause of the inquirer's difficulty is, as stated above, consultation with a well qualified doctor of medicine.

If it should be ascertained that colds are what the inquirer has, it can only be said with respect to the prevention of colds, that the subject is not well understood. About all that can be done is to build up the general resistance, live as hygienically as possible, avoid persons who have colds and, when a cold does occur, go to bed and stay there until recovery.

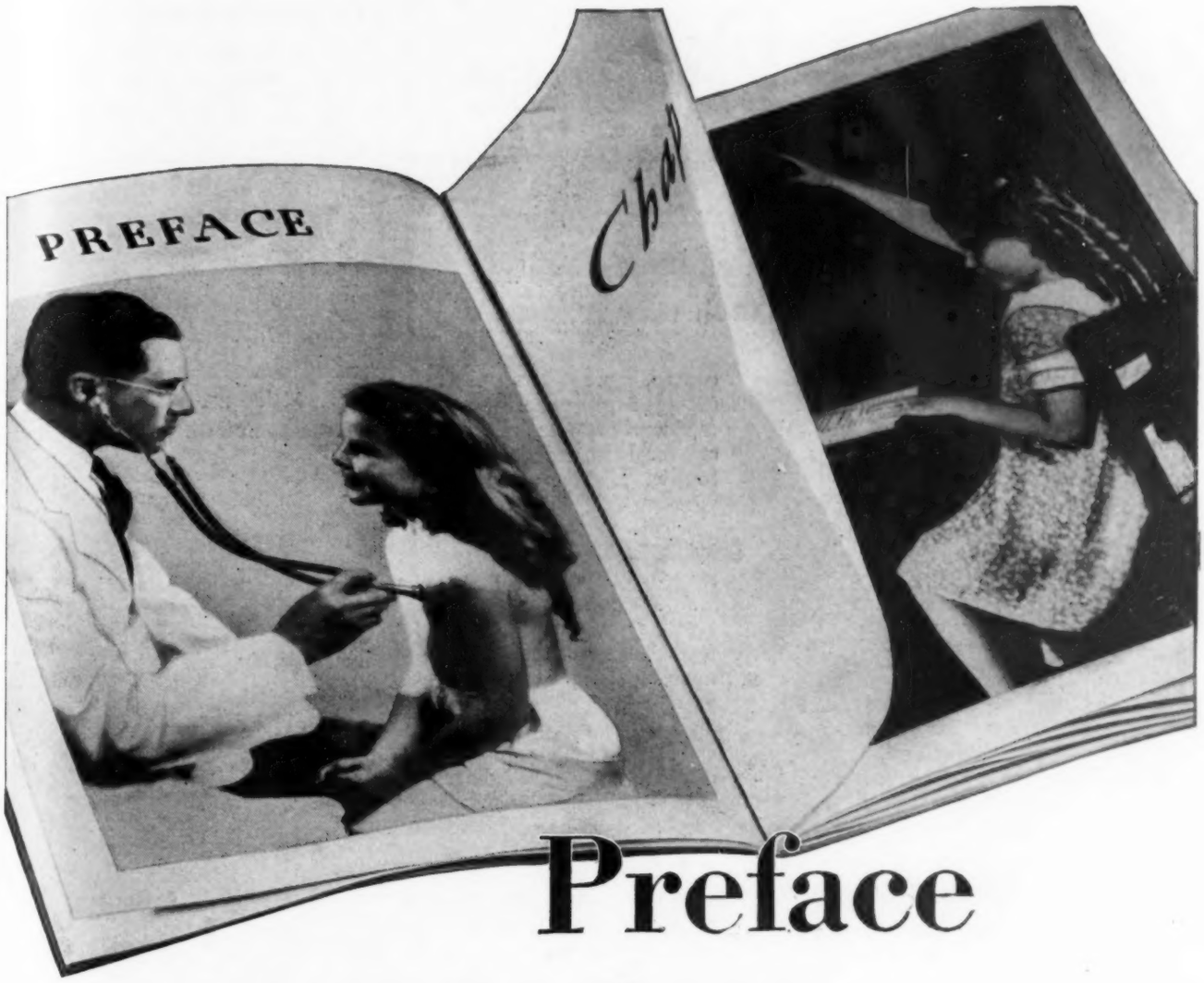
Serum Treatment for Hernia

To the Editor:—Would it be possible for me to obtain information in regard to the serum treatment for hernia?

C. R. D., Illinois.

Answer.—The operative treatment for hernia has been satisfactory as there are few recurrences and practically no immediate deaths. On this account surgeons have hesitated to give up this plan of treatment or to substitute any other for it. Furthermore, treatment by the "injection method" requires considerable time, as it has to be repeated at intervals.

Injection treatment is sometimes mistaken for "serum treatment" for rupture. The treatment involves the injection of an irritating solution and not a serum. Good results are said to follow that form of treatment in certain instances. It has been employed a few times in a well known clinic in cases not suitable for operative measures, and in some respects the results were satisfactory.



Preface

to a new chapter . . .

SCHOOL begins again! New books, new pens, new pencils! Another chapter in school life is about to be written. What achievements this chapter will record—what success it will show, no one can foretell.

But one thing is sure. The child whose body is well—who can resist handicapping disorders, will write a finer record than will his or her less fortunate schoolmates.

Make sure your child enjoys this advantage. Preface the new chapter with a thorough health examination. Have your physician see that heart, lungs, and all the other major organs are functioning properly. Be sure the dentist puts the teeth in perfect condition. Then health will help make the new school year a great success.

In any thorough examination, x-rays play a very important part. The radiographs that are made give your physician and dentist facts which can be obtained in no other way. Frequently they are first to reveal disorders, showing them in their earliest stages when treatment is most effective.

Send for the booklet, "X-rays and Health," which tells how x-rays help to keep you well. Mail the coupon today.

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The Heart Disease Paradox

In this country more cases of heart disease are being prevented each year—yet more deaths are charged to the heart than ever before.

DESPITE seeming contradiction, those are the facts. Better protection of children against diseases which are often followed by heart trouble means that fewer young hearts are being exposed to injury. Better treatment of hearts temporarily damaged by the "poisons" of acute infections often prevents such damage from becoming permanent. Better control of venereal and other diseases that damage hearts has been another important factor in reducing the deathrate from heart disease at all ages up to 45 years.

* * * * *

You can help to prevent heart disease in your home by having your children immunized against diphtheria, by protecting them, so far as possible, against other heart damaging diseases, such as sore throats, repeated colds, acute rheumatic fever, scarlet fever, measles and typhoid fever.

Should they have any of these diseases, see that your doctor's orders are strictly obeyed, so that injured hearts may not result. Especially follow his instructions as to how long the child is to be kept in bed. Rest is an important part of the treatment for "poisoned" hearts during and following any acute infection.

Annual health examinations offer a further opportunity to control heart disease. In middle-aged people heart disease frequently results from chronic or focal infections in teeth, tonsils, sinuses or in other parts of the body.

When advisable, your doctor may employ the fluoroscope and electrocardiograph to determine the condition of your heart. He can see whether or not it is showing the effects of wear and tear long before it actually breaks down. If necessary, your doctor will advise changes in habits of work and rest, food and drink, or the correction of impairments.

Far from being cause for alarm, the mounting deathrate from heart disease at the older ages is encouraging evidence that needless deaths in childhood, youth and middle age are being prevented. Many of the deaths of older people ascribed to heart disease are really due to heart failure—just the natural, peaceful ending of a long life.

* * * * *

More than half the readers of this page, who are about 35 years old, will pass the age of 70; and one out of five will outlive fourscore years. Many a man is adding years to his life and is enjoying what is literally a new lease of life by taking care of his heart and by making intelligent changes in his living habits.

Send for Metropolitan's free booklet "Give Your Heart a Chance." Address Booklet Dept. 934-Z.

METROPOLITAN LIFE INSURANCE COMPANY
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Vertigo—Chiropractic Treatment

To the Editor:—I have an ailment supposed to be vertigo or "nerves," and some one has advised me to go to a chiropractor. Have you any known facts about the treatments chiropractors give and whether or not they are safe?

B. R., New York.

Answer.—The treatment given by chiropractors consists of so-called manipulation of the spine. It is an unscientific treatment based on wholly fallacious theories of disease. Chiropractors as a class are deficient in the necessary scientific education which is a basic essential for a safe practitioner of a healing art.

In the vast majority of cases, chiropractic treatment is merely ineffective, but in a number of instances disastrous results have followed the application of chiropractic methods where harm has been done by forcible manipulation of the body.

Attention should be called to the fact that vertigo, which simply means dizziness, is merely a symptom and does not mean anything in itself. Vertigo may be due to temporary disturbance of digestion, to diseases of the middle ear, to serious diseases of the central nervous system, to high blood pressure, to low blood pressure, to weakness and anemia, to oncoming acute diseases, or simply to an instability of the nervous control of circulation, resulting in a temporary and intermittent anemia of the brain. Unless the cause is identified, treatment for vertigo will be useless.

Toxoid—Prevention of Diphtheria

To the Editor:—I understand there is a new serum for prevention of diphtheria and that only one dose of it is required instead of a series of three doses as with the toxin-antitoxin commonly used. Has this new serum been tried sufficiently to be proved successful?

I. R., Georgia.

Answer.—Your inquiry apparently refers to the prevention of diphtheria by the use of alum-precipitated toxoid. Only one dose is necessary. This is a tried and accepted method on which you can rely with confidence. It is superior to toxin-antitoxin because it does not contain any preparation made from horse serum and therefore carries with it no danger of sensitization and no likelihood of subsequent trouble if horse serum products are used in the treatment of other diseases.

Loosening of Teeth

To the Editor:—My wife had trouble with her teeth loosening. They were perfectly sound in every way but became loose and had to be pulled. The dentist said he could see no trouble with the teeth or gums and could not understand why the teeth became loose. She craved tomatoes and tomato juice. She has eaten these freely for about two years, and she has not had another tooth loosened. Before this time she was having one pulled every six months. What caused these teeth to loosen? Did the tomatoes have anything to do with stopping the trouble?

A. B. W., Georgia.

Answer.—Without seeing or examining the patient, it is impossible to tell what caused the teeth to loosen. Loosening of the teeth does not occur unless there is some disease, either of the teeth or of the gums. The taking of tomato juice or the eating of tomatoes is a desirable procedure because of the vitamin C which is thus supplied. Vitamin C, among other food substances, is beneficial to general nutrition and therefore probably has a beneficial effect on the teeth and the bones. It is specifically a preventive of scurvy. One of the symptoms of scurvy is bleeding and sponginess of the gums with consequent loosening of the teeth. Please understand that this does not intend to imply that the patient had scurvy, because it is impossible to diagnose the case without seeing and examining the patient.

Lactic Milk

To the Editor:—Is there any harm in taking lactic milk made by mixing milk, karo syrup and lemon juice and in taking agar regularly?

H. O. W., Georgia.

Answer.—There is no harm in taking the mixture of milk, karo syrup and lemon juice, but there are more pleasant ways of taking each of these perfectly wholesome foods. Moreover, such a mixture is not lactic milk. It is simply milk soured by lemon juice. Lactic milk is produced by fermentation through the action of certain bacteria which convert the milk sugar in the milk into lactic acid.

The eating of agar regularly may be harmful to some persons. A physician should be consulted.

Nearly one third of all home accidental deaths involve children under 15 years of age.

HEINZ

ASSURES AMPLE, EVEN VITAMIN VALUE IN YOUR BABY'S DIET

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Tests reveal far higher vitamin retention in Heinz Strained Foods than in most home-cooked vegetables!

VITAMINS ESCAPE!
Modern, scientific preparation methods are necessary to retain a high content.

● You know your baby needs those precious vitamins. So you buy the freshest vegetables you can find. You cook and strain them carefully.

But *how* fresh are they? Each hour after harvesting robs them of vitamin content. Cooking and straining takes its toll. Do you *know* that your baby gets his necessary quota of vitamins?

Many mothers have discarded this tedious, uncertain method. They give regular feedings of Heinz Strained Foods, which come, vacuum-packed in enamel-lined tins, ready to warm and serve.

Within a few hours after being harvested, right at the point of perfection, these vegetables are cooked and strained without exposure to vitamin-destroying air. Heinz scientific methods and equipment retain far higher vitamin content than is possible with ordinary home methods. Full mineral content is retained. Fresh natural flavor and color wonderfully preserved.

Try three tins of Heinz Strained Foods. Not only get rid of the tedious task of preparation, but actually assure your baby a generous, ample vitamin value. Ask your grocer.

Heinz Strained Foods include 8 varieties—Strained Vegetable Soup, Peas, Green Beans, Spinach, Tomatoes, Carrots, Beets and Prunes.

GET THIS VALUABLE NEW BABY BOOK

Sixty pages of up-to-the-minute facts about infant diet. "*Modern Guardians of Your Baby's Health*" clears up the mystery of vitamins and minerals. It has been passed by the Committee on Foods, of the American Medical Association. Merely send, with the coupon below, the labels from three tins of Heinz Strained Foods and receive your copy. Or, instead of labels, send 10 cents.

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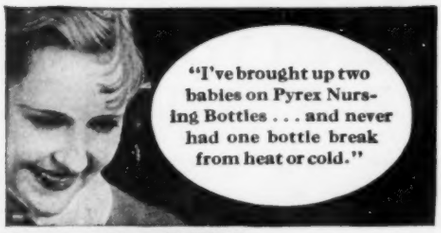

These bottles heat as fast as water will boil—you can save time without worry about breakage.

From boiling water they go instantly to cold, resisting breakage and avoiding delayed feedings.

These bottles can be sterilized more thoroughly. Doctors and nurses recommend them.

Pyrex Brand Nursing Bottles are truly inexpensive for six are generally sufficient for the entire nursing period. Six-sided on the outside, round on the inside—with clearly marked ounces. 8-oz. size with narrow neck or wide mouth, 25¢; 4-oz. size with narrow neck, 15¢.

PYREX NURSING BOTTLES

Trade-mark Reg. U. S. Pat. Off.

The A.P.-UPLIFT

U. S. Pat. 1,702,922 —Invented by Mme. Poix to create the stylish upward contour; to relieve pain and remove cause of many bust troubles; also for pre-natal and nursing periods.

Sizes 30 to 44
Pink Repp.....$1.00
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If not at dealers, order direct giving exact bust measure next to skin. Booklet free on request.

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Excellent—LUCKY BREAKFAST FOOD—Nutritious
A FARINA--made from the CREAMY part of the WHEAT with FINE BRAN added.

For CHILDREN--Contains 0.7 per cent crude fiber which helps to counteract constipation due to insufficient bulk in the diet.

For ADULTS--Contains considerably more calories, weight for weight, than are found in eggs, white or whole wheat bread.

Accepted by American Medical Ass'n, Committee on Foods
Write for Free Sample
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Do You Know—

1. The difference between food infection and food toxemia? *See page 784.*
2. Whether or not intensive physical exercise before retiring has any effect on children's sleep? *See page 781.*
3. Why tooth-pastes and proprietary mouth washes should be regarded merely as pleasantly flavored aids for mouth toilet? *See page 813.*
4. Whether or not stuttering is inheritable? *See page 790.*
5. Why biscuits should be cooled slightly before being eaten? *See page 832.*
6. Why young children should not be burdened with extracurricular activities? *See page 818.*
7. How many hours of ironing are required to consume 500 calories? *See page 824.*
8. Why epidemics of infantile paralysis are most liable to occur in localities where the germ has long been inactive? *See page 808.*
9. That 15,000 children died unnecessary accidental deaths in 1932? *See page 810.*
10. What work the health department of a college should be expected to accomplish? *See page 778.*
11. Why dental quacks still exist? *See page 801.*
12. What effect prenatal and preschool environment has on a child's school record? *See page 796.*
13. Why one should be conservative about labeling a child as a victim of tuberculosis? *See page 804.*
14. How the home and school may work together for the child's health? *See page 794.*
15. How best to treat scabies? *See page 826.*
16. The various ways in which vision may be tested? *See page 829.*
17. What the Ann J. Kellogg School of Battle Creek, Mich., is doing for handicapped children? *See page 821.*

MOTHERS who have Snuggle Bunnys for their children declare they would not be without them for anything. Baby can sleep comfortably with arms at sides or up overhead in a position which permits the full development of his lungs; he can turn over, kick or twist, but *he is always covered with Snuggle Bunny.*

START BABY THE SNUGGLE BUNNY WAY

Early in the third month develop correct sleeping habits and help to prevent thumb sucking with Snuggle Bunny. No more worrying if baby is covered, and no danger of exposure. He cannot kick off the covers, creep under them nor crawl out of them, so he *goes to sleep quickly and sleeps longer, too.* Mother's sleep is uninterrupted. The medium weight Snuggle Ducky made over the same pattern is preferred for moderate climates and warm sleeping rooms.

INEXPENSIVE CRIB COVERS

The new **Snuggle-In** is made in several types, each of which contains some of the features of the above garments. No safety element is omitted. All Snuggle crib covers have a soft cushion-like neck band and cut-out back. All are attached to the crib with **Jiffy Join** fasteners which makes daily airing easy. Snuggle crib covers are available as low as $1.95. *Ask to see them at your favorite store.* Further information, Mothers Service Bureau, Dept. H934
SNUGGLE RUG COMPANY, Goshen, Ind.
In Canada, Erd-Marshall Co., Sarnia, Ont.

SNUGGLE BUNNY

The SEX TECHNIQUE IN MARRIAGE • By I. E. Hutton, M.D.

"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . . It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance." —Hygeia.

Acclaimed by the Medical Press Everywhere

At bookstores or direct from **Price $2.00**
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Is Your Baby Troubled with I-C INDIGESTION CONSTIPATION

Exercise Often Helps!

The TEETERBABE JUMPER SEAT

Write for Circular giving Complete Facts

Babies need exercise the same as grown-ups to prevent Indigestion and Constipation troubles. In a Teeterbabe, baby can exercise to its heart's content, developing its muscles and aiding its little organs to function. Physicians endorse it highly for this reason —also because it does not suspend baby by the crotch.

Three Articles in One

A jumper that can be used indoors or outdoors. An auto seat that combines safety and comfort. When placed on an arm-chair, it serves as a high chair.

NATIONAL PRODUCTION CO.
4578 St. Jean Ave., Detroit, Mich.

FIDDLE OR FIDDLE-STICK?

(Continued from page 799)

wear and tear. The body is the electric light plant, and the brain is the bulb. By throwing such a monkey wrench as an overdose of alcohol into the furnace of the plant, one can make a monkey out of a man or a fool out of a genius, but not unless one has a real man or a genuine genius in the beginning.

"Nature," as Karl Pearson puts it, "selects for physique and she selects for mentality." She may connect a superior intelligence with a low powered body or an inferior mind with a more vigorous physique. It is all the same to her. She merely shakes anew the multifarious pieces she finds in her genetic kaleidoscope. After selection, the conditions under which the child develops may be favorable or unfavorable to the growth of body or mind.

This comparison is good as far as it goes; but it is only half adequate, for, in the case of the human being, the bulb looks after the fueling and the care of the mechanism on which its light depends, and it may manipulate the very missile which, when thrown into the works, brings about a dimming of its own radiance.

Sir Walter Scott aptly said, "As for mind and body I fancy I might as well inquire whether the fiddle or the fiddle-stick makes the tune." The best music flows from the instrument when both are most perfect. It is possible to have a sound mind in an unsound body or an unsound mind in a sound body; and there is also, for some mortals, that happy state of "a sound mind in a sound body" for which we, like the old Romans, pray. Whether we are giants or Davidian striplings, organically perfect or imperfect, we make the most of our minds when we make the most of the mechanisms on which the condition of the mind depends.

As Butler put it, "We shall never get straight till we leave off trying to separate mind and matter. Mind is not a thing or, if it be, we know nothing about it; it is a function of matter. Matter is not a thing, or if it be, we know nothing about it; is is a function of mind."

The city of New York recently held a public celebration in Central Park over the immunization of the one-millionth child against diphtheria. A far more worthy occasion for celebration than many for which the bands and orators turn out.—*The Crusader.*

FIVE *body-building nutrients every growing child needs*

1. CARBOHYDRATES are needed by the busy, active youngster for vital energy.
2. FATS are needed, in easily digestible form, for reserve energy and weight.
3. PROTEINS are needed for the development of solid flesh and strong muscle.
4. MINERALS, such as calcium and phosphorus, are needed for strong, straight bones, and sound, even teeth.
5. VITAMIN D. Vitamins are needed, including Vitamin D, which helps to utilize efficiently the calcium and phosphorus in the development of the bones and teeth.

In Cocomalt your child gets *these 5 important nutrients*

See how he gains in weight and strength!

SOME foods are rich in carbohydrates—some contain proteins—some provide essential minerals. But very few foods combine *all* these vital nutrients—and others even more important for sturdy growth and development.

That is why Cocomalt is so beneficial for growing children. Mixed with milk, it produces a food-drink of high nutritional value. In this one delicious chocolate flavor drink are combined 5 vital nutrients your child needs and *must have* to grow strong, straight, sturdy.

Cocomalt gives your child *extra* proteins, *extra* carbohydrates, *extra* food-calcium and food-phosphorus. The *bone* building Sunshine Vitamin D has been added by special process, under license by the Wisconsin University Alumni Research Foundation.

Every cup or glass of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U. S. P. revised) units of Sunshine Vitamin D.

High in food value—low in cost

A cup of Cocomalt, properly prepared is equal in food-energy value to *almost two glasses of milk alone.* No wonder youngsters gain so fast, get so husky, on this food-drink! Sold at grocery and good drug stores in ½-lb., 1-lb. and 5-lb. air-tight cans. Delicious HOT or COLD.

Special trial offer: For a trial-size can of Cocomalt, send name and address (and 10c to cover cost of packing and mailing) to R. B. Davis Co., Dept. 9-J, Hoboken, N. J.

Cocomalt is accepted by the Committee on Foods of the American Medical Association. Prepared by an exclusive process under scientific control, Cocomalt is composed of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Sunshine Vitamin D. (From irradiated ergosterol.)

ACCEPTED AMERICAN MEDICAL ASSN.

Cocomalt

Prepared as directed, adds 70% more food-energy to milk

Expecting a Baby?

THEN here is *more* good news for you! Our latest style book for mother and baby is yours *free*. Simply send us coupon below.

Let this beautiful book answer all your questions expertly . . . economically! Let it show and describe for you a great variety of maternity dresses with adjustable figure-concealing features . . . as smart *after* baby's arrival as before!

For example, note long double jabot on dress pictured above. (All-wool crepe, $8.95). See the smart lines of dress pictured at left (all-silk flat crepe, $6.95). Rayon-and-cotton suit on cover of book is $3.98 . . . other suits and dresses at $3.98 to $16.95. Lovely cottons, $1.19 to $2.98.

ALSO corsets and abdominal supporters, designed for style as well as health. ALSO slips, gowns, underwear for mother. ALSO, everything for the baby! And all at prices amazingly low.

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Please mail free Style Book for Mothers-to-be.

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FOOD POISONING

(Continued from page 787)

ing bulges at the ends or any container from which gas escapes on opening. Unfortunately, this evidence of gas-forming bacteria may be absent, and yet the product may contain the botulinus toxin. The prevention of infection by Bacillus botulinus depends on care and cleanliness in the preparation of the preserved food.

It is equally unfortunate, in the interests of prevention of food infections, that infected foods do not always, or even frequently, show evidence of taint either in taste or appearance. Here again prevention begins with the preparation of the food.

The treatment of food poisoning is always a matter for the physician, although in emergency a rapid emptying of the stomach and intestines is always indicated as the first step. A specific serum is available for the treatment of botulism. It must be borne in mind, however, that as there are three types of this organism, each producing its own type of toxin, the use of the proper antiserum is essential.

While the primary purpose of this discussion is to survey in a brief, general fashion the diseases that may result from the bacterial contamination of foodstuffs, the subject cannot be dismissed without mention of the important and at times disastrous effects that may follow the use of foods infested with parasites capable of causing disease.

Among the more common of these parasites are, of course, the tapeworms, several varieties of which are responsible for disease in the human being. Fortunately, however, the present rigid governmental food inspection renders this source of disease infrequent and relatively uncommon. This applies to those varieties of tapeworm that infest beef and pork, but it does not apply to the fish tapeworm.

Perhaps of even greater importance, because of the chronicity of the condition resulting, is the much smaller but more active parasite, Trichinella spiralis, which usually occurs in hogs, although infestation of cattle is not uncommon.

All these conditions are readily preventable by measures directed toward the detection of the parasites in the meat. An even more important and essential preventive is the thorough cooking of all such food products. The latter precaution should never be neglected even when it is known, as in the case of Trichinae, that refrigeration at a temperature low enough to kill the parasites has been carried out for an ample and efficient period.

The occurrence of disease following the ingestion of contaminated food is at present the subject of renewed interest and discussion because of an outbreak of amebiasis resulting from the contamination of food with the pathogenic Endamoeba histolytica, a parasite at one time thought to have a relatively restricted and tropical distribution.

The speed and ease of modern transportation, however, have long since modified former concepts as to the geographic distribution of diseases and, aided and abetted by the intimate admixture and later far flung redistribution of many peoples during the World War, bid fair eventually to destroy entirely any such limitations. Amebiasis can no longer be regarded as a disease of particular places or peoples but must be recognized as a condition becoming more and more common in the United States.

I said that food poisoning was always the result of the presence of bacteria and was seldom caused by fresh food. There are two exceptions to this rule, both involving poisonings due to the presence of chemical agents in the food. The metals responsible for food poisonings of this type are lead, arsenic and, infrequently, tin.

Of more importance, as has recently been recognized, is the presence of lead and arsenic on fresh fruits or vegetables that have been sprayed or treated with insecticides and have not been thoroughly washed free of such solutions before use. While modern methods of canning and the type of kitchen utensil now in use have made chemical food poisoning extremely uncommon, the possibility of food poisoning originating from the presence of poisonous chemicals used as sprays is by no means remote, for clouds of poisonous sprays for insecticidal purposes are annually projected over trees, shrubs, vegetables and stagnant waters.

In 1929 in the United States, 29 million pounds of calcium arsenate and 29 million pounds of lead arsenate were employed for insecticidal purposes; it is now recognized that these chemicals are sufficiently soluble in human gastric juice to cause lead and arsenic poisoning. That this results in a definite hazard is shown, for example, by the report of a dinner given by a large group of medical men at which over 100 of those present became ill from eating broccoli which had been sprayed.

The relation between the spraying of foodstuffs and the production

FOOD POISONING

of illness may be much less obvious than the example just cited. During 1932, for example, more than 300 officers and men of the French merchant marine were seriously poisoned and two deaths occurred as the result of wine made from sprayed grapes; the poisoning was traced to the presence of arsenic. As long ago as 1901, an extensive outbreak in London, in which there were 6,000 cases of poisoning and 60 deaths, was traced to arsenic in beer; that case has become a classic in medical annals.

It is thus quite possible that the impregnation of foodstuffs with metallic poisons may well require careful investigation and the same consideration as a health hazard in the near future that is now given to food infections and food intoxications.

RESTAURANT SANITATION IS UP TO PATRONS

Has the common drinking cup ever been abolished?

"No," the *American Journal of Public Health* says. "We still have it, though not in the same form as before. Now it is in the form of glasses, dishes and tableware inadequately cleansed between servings. Go to almost any soda fountain, in any city; watch the attendant pluck a glass from the counter, swish it about hastily in a basin of muddy-looking tepid water, rinse it quickly in cold water, then use it to serve another customer.

"That glass is worse than the common drinking cup! Its superficial washing has served only to bring it into contact with germs from many other glasses 'washed' in the same water."

It is estimated that about 92 per cent of all communicable diseases are transmitted through the mouth and nose, *The Crusader* says.

The Committee for the Study and Promotion of the Sanitary Dispensing of Food and Drinks, New York, has outlined four practical steps for the public to use in protecting itself against the common drinking cup of today. They are:

1. Decline dishes, cups or glasses that are obviously unclean.

2. Quietly protest to the management against all insanitary practices observed.

3. Commend the management of public eating places that uphold high sanitary standards.

4. Report by name and address to the local board of health all public eating and drinking places violating high sanitary standards.

AT JERRY'S HOME
I'M AT MY WIT'S END! I JUST CAN'T GET JERRY TO WASH HANDS OFTEN
I HATE TO SPANK HIM.... LET'S TALK IT OVER WHEN HE GETS HOME TONIGHT!

AT DAD'S OFFICE
... DIRTY HANDS? MY BOY WAS JUST AS BAD, UNTIL WE GOT HIM A LIFEBUOY WASH-UP CHART. IT'S A GAME
THAT'S AN IDEA! I'LL SEND FOR ONE TODAY

ONE MONTH LATER
ANOTHER NOTE FROM MISS KANE, DEAR, SAYS SHE'S DELIGHTED WITH JERRY'S NEW CLEANLINESS. HIS MARKS ARE BETTER, TOO!
THAT LIFEBUOY CHART CERTAINLY WORKED WONDERS

WHY "make a mountain out of a molehill"?... Dirty hands are no problem at all when you have a Lifebuoy Wash-up Chart around. How it brings those stubborn little "won't wash" youngsters into line! Puts an end to wash-up troubles!

This Chart wins out because it makes a jolly game of washing hands, instead of a duty. Hand-washing ceases to be an ordeal, when it means another point scored toward winning a Health Guard badge and a 100% clean hands score. There's something to strive for—a real incentive toward cleanliness. And keeping clean becomes *fun!*

Better still, the Lifebuoy Chart explains in an interesting picture story just *why* clean hands are so important—that hands pick up germs from almost everything we touch—and that washing hands often, *always before meals*, with fresh, clean-smelling Lifebuoy Soap removes not only dirt but *germs* as well. A wonderful safeguard against the 27 germ diseases, listed by the Life Extension Institute, that hands may spread.

• • •

FREE: Mail in the coupon below and get the helpful Lifebuoy Wash-up Chart and school-size Lifebuoy Soap FREE for each of your children. Put an end to worries about cold-breeding germs on dirty hands. See how quickly Clean Hands will become a habit.

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Health Soap
FOR FACE. HANDS. BATH

free

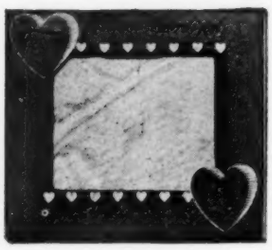
(This offer good in U. S. and Canada only)

LEVER BROTHERS CO., Dept. 199, Cambridge, Mass.
Please send me, free, Lifebuoy school-size cakes and Wash-up Charts for my.....children.

Name.....

Address.....

City.....*State*.....



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Baby Garments

The first month is the most serious in baby's life—the most anxious for mother. Yet much of this anxiety can be prevented.

Avoid buying tiny-baby garments that have been fingered by careless hands. Ordinary washing will not properly sterilize such garments. They should be steam sterilized.

Vanta Garments in layette sizes are steam sterilized at the factory by the Auto Claving process, then sealed in cellophane-window packages. Protected from careless hands, they reach mother or nurse with seal unbroken—ready for baby to wear without washing.

In addition to sterilized safety, Vanta tiny-baby garments have No Pins—No Buttons. All fastenings are made of twistless tape.

And now—the latest Vanta creation—Silva Lining. In layette size garments—a smooth silvery sheen against the skin, soft and downy outside, and very absorbent.

BABY'S OUTFIT—Free. Write for this wonderful book. It tells about baby in Summer, His Care, His Clothing, His Diet and other interesting things mothers want to know. Also 500 suggestions for names of boys and girls. Address Department H 8.

"Next to your Baby—
There's nothing like Vanta"

Earnshaw Knitting Company
Newton, Massachusetts

SCHOOL AND HEALTH

(Continued from page 845)

Peter claimed he had for breakfast would, if eaten raw, be quite suitable in rounding out a diet of bread and milk. While the coffee the child had with the milk is not desirable, it is much less harmful than not having the milk at all. Would such a procedure have aided the child in achieving a possible worthwhile goal which would have been within the economic possibilities of the family? Would the actual health of the child be likely to be improved?

When one actually studies classroom procedures in the light of the immediate and pertinent needs of the children, the question of what to teach and how to teach so that the teaching will be most valuable to the children forms the fundamental consideration of each teacher.

NEW HEALTH BOOKS
for teachers and pupils

TWO high school teachers in New York City have written a high school book, "Everyday Problems In Health,"[1] which should be extremely helpful to teachers. It is organized under five units. The presentation is simple, clear and direct. Excellent exercises follow each problem.

However, the authors have evidently tried to write a book which would fit into many grades. In the preface they state that their book is planned as a basic textbook for pupils either in junior high school or in senior high school. This would seem to be an attempt to fill a rather large order since there is such a difference in the ages and mental powers between pupils in junior high schools and those in senior high schools. It is too much to expect that a book adapted to the needs of pupils in a seventh grade would fit equally well into a twelfth grade. The book seems to be adapted to junior high school pupils.

Some of the problems are treated briefly and somewhat superficially. For example, only a little more than three pages of highly condensed dogmatic material are devoted to the subject of alcohol. Facts, figures and experimental material would have made this treatment more acceptable to those who are interested in instruction on this subject.

1. By Wheat, Frank Merrill, and Fitzpatrick, Elizabeth T. Price, $1.20. Pp. 440. New York: American Book Company, 1933.

THE INTEREST in health education is reflected in the increasing number of doctors' theses that are finding their way into print. Dr. Gordon has done a piece of work which should be a satisfaction to himself, and his book, "A Health Program For The Children of a County,"[2] ought to offer suggestions to health educators who are interested in organized health education in a county.

Dr. Bennett has made a study of child health in Queen Anne's County, Md. On the basis of a careful survey he outlines the way in which a practical health program might be carried out. It is to be hoped that this study will lead to other worthwhile investigations.

AN OLD English physician when asked what he did for a cold replied, "I use two soft linen handkerchiefs." The medical profession has advanced a little closer to the secret of the common cold since then, but the cold is still mysterious and challenges the practical scientist. "Our Common Enemy: Colds"[3] describes briefly the plans of attack organized by science and the layman. Probably the most important suggestions emanating from the book are these: Stay away from people who have colds. If you get a cold go to bed.

BECAUSE there are too many persons who think it is their inalienable right to drive as they choose, to walk wherever their fancy leads and to gamble with their own lives and the lives of others, about 30,000 persons are killed yearly and about 1 million are injured. The year 1933 marked an upturn in the number of persons killed in automobile accidents. Nearly 126,000 accidents were caused by fast driving, and the driving speed is increasing every year. These are some of the startling statistics presented dramatically by well chosen words, photographs, line drawings and graphs in "The Great American Gamble."[4]

This is a publication every citizen could read with profit. Teachers of health and social science could use it as the basis for several lessons on safety. The facts presented in such a booklet should be known to every high school pupil.

2. By Bennett, Thomas Gordon. Price, $2. Pp. 196. New York: Bureau of Publications, Teachers College, Columbia University, 1933.

3. By the Editors of *Fortune* in Consultation with Eminent Physicians. Price, $1. Pp. 102. New York: Robert M. McBride & Co., 1934.

4. Pp. 55. Hartford, Conn.: The Travelers Insurance Company, 1934.

A BIBLIOGRAPHY
for solving health education problems

Advances in Health Education. Report of Health Education Conference Held at Ann Arbor, June, 1933. Price, $1.50. Pp. 305. New York: American Child Health Association.

Catalog: Units of Work, Activities, Projects, etc., to 1932. Lincoln School Research Studies. Price, $2. Pp. 290. New York: Bureau of Publications, Teachers College, Columbia University, 1932.

An extensive bibliography, well organized for ready reference.

Fort, Mrs. William: Milk, Truck and Dairy Products. Activity Series, No. 2. Price, 30 cents. Pp. 21. Raleigh, N. C.: Raleigh Public Schools, 1931.

A report of an activity carried on in the first grade.

Gerwitz, Eleanor: A Study of the Human Eye. Free. Pp. 4. New York: National Society for the Prevention of Blindness.

This unit was developed in a one room rural school for the third, fourth, fifth and sixth grades.

Latimer, Jean V.: A Suggested Teaching Unit for Secondary Schools on Tuberculosis and Its Prevention. Price, 20 cents. Pp. 31. Boston: Massachusetts Tuberculosis League, 1933.

Includes educational principles, methods, subject matter and references.

My Progress Book in Health and Civics, No. 6. Price, 18 cents. Pp. 62. Columbus, Ohio, and New York: American Education Press, Inc., 1930.

A loose leaf notebook to guide students in the study of local community health. Each chapter centers on one problem, and aids to the solution are found in the second half of the publication. For the seventh, eighth and ninth grades.

Teachers' Guide to Child Development. Kindergarten and Primary Unit. Price, $1. Pp. 658. Sacramento, Calif.: California State Department of Education, 1930.

Turner, C. E., and Lytle, E. L.: The Nature of Bacteria. Monograph, No. 7. Free. Pp. 39. New York: School Health Bureau, Welfare Division, Metropolitan Life Insurance Company.

An Education

is only a starter on the road to learning, the road to understanding of the world's great works, the road of progress and achievement. To get the greatest measure of happiness out of life, one must keep up with the world. To do this best, read

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A Troublesome Feeding Problem

Does your family drink enough milk? If not, why not try the chocolate flavored product—KRIM-KO, distributed by hundreds of leading dairies all over the United States. It is made with one of the most expensive chocolate flavorings on the market today. It has the food energy value of standard milk. It contains plenty of bone and tooth building calcium. Best of all, it has that TRUE *delicious chocolate flavor* that everybody likes. Can be served hot or cold. No fuss or bother. Comes all ready to serve. Is less expensive than self-mixed drinks. Pasteurized for your protection. If your dairy cannot supply you with Krim-Ko, write to the KRIM-KO COMPANY, 4830 S. Turner Ave., Chicago, Ill.

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Chocolate Flavored Drink

IS CHOCOLATE FLAVORED, SWEETENED, PARTIALLY DE-FATTED MILK (ADDED TAPIOCA-SALT)

SUBSCRIBE NOW FOR HYGEIA!

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DUTCH TEA RUSK

A Delicious, Easily Digested Energy Food

Light, crisp and crunchy, uniformly toasted. Made of the finest high protein wheat flour, sugar, shortening, malt extract, fresh whole milk, fresh whole eggs, and other baking ingredients. Easily digested because partially dextrinized.

- Fine for infants and convalescents Used and recommended by many pediatricians for infant feeding.
- Excellent for the training of chewing habits in babies and older children.
- Ideal for children's in-between-meal lunches, since they satisfy normal hunger without upsetting the appetite for regular meals.
- Thoroughly relished by adults, too. Write for descriptive literature.

FREE—Color illustrated recipe book. Send name of grocer and 20 cents for full size sample package.

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WHEN YOUR CHILD VISITS A CENTURY OF PROGRESS

"No one with any sense would turn a child loose in a food store filled with all kinds of eatables and tell him to hop to it, however delicious the individual goodies might be to his taste or satisfying to his appetite," an article in *Childhood Interests* suggests. "Like such a shop is the Chicago Century of Progress. Here there are hundreds of things for a young person, which he will enjoy and which will likewise be of value to him in many different ways. Many of the features which have not been planned especially for him are what he takes the greatest delight in and what will, moreover, be of the most lasting help."

Parents should have an intelligent general plan of what they are going to show their children at the fair and should not try to see too much in one day. Unplanned sightseeing is both mentally and physically wearing for any one. A dean of a great university in a baccalaureate address reminded the young graduates that in continuing their education in life's school it would not be the mass of facts that they gathered that would add to their culture but mastery and assimilation of these facts.

Most children like to lag over the things that interest them and balk at being dragged along to the next thing by an impatient parent. If they are going to get the most out of the fair, they should be allowed to spend as much time as they desire with the things that interest them. Sometimes it may be well to leave a child at some exhibit for an hour and come back for him.

The foreign villages provide an ideal parent-child tour into lands of romance often read about, perhaps together. For instance, Junior should be allowed as much time as he wishes in watching the village smithy under the spreading chestnut tree. Children who are old enough to have had even a little of Shakespeare in school will hear good speech and see good taste in lively entertainment if they accompany their parents to the Shakespearean productions. Lessons in history, geography and literature will be supplemented by visits to any of the villages, just as the Hall of Science will add to the child's knowledge of and interest in many of the things he has learned about in school. But the parent should add to such cultural and educational fare, something to entertain and something to relax the child, so that he will have a well balanced ration on each sight-seeing trip.

Schools and Camps

Schools for Backward Children

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*

220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

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For boys and girls whose progress has been hindered or retarded by illness, nervousness, speech defects or inability to adapt themselves to the usual form of instruction. Birchmont, new hall for girls. Illustrated catalog. 3415 Grand Avenue, Des Moines, Iowa.

<> TROWBRIDGE TRAINING SCHOOL <>

Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

Elwyn Training School
FOUNDED 1852

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Nineteen major buildings, four hundred and forty acres, faculty of nineteen specially trained teachers, resident staff of three physicians. Booklet on request.

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Schools and Camps

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By teaching your children at home with the famous Calvert School courses, you will not only give them a superior elementary education, but you will safeguard their health. Calvert training permits outdoor study away from crowded classrooms, and allows more time for healthful play. Thousands of parents all over the world are educating their children the Calvert way. Write now for full details.

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Try Shopping Among HYGEIA Advertisements

INFANTILE PARALYSIS IS LARGELY A SUMMER DISEASE

Infantile paralysis, like typhoid and bowel disturbance of infants, is largely a summer disease. Although it may occur during any month of the year, over half of the total number of cases come in August, September and October.

Direct contact between persons is regarded as the chief factor in the spread of infantile paralysis. Because of the seasonal prevalence of the disease, flies and other insects have been suspected of conveying the virus or germ. Insect transmission has not, however, been demonstrated. Apparently healthy persons may be carriers of the virus of infantile paralysis, and such carriers are difficult to determine. This fact makes advisable the reduction, to a minimum, of human contact during an outbreak, the Iowa department of health advises.

Early symptoms of infantile paralysis comprise headache, fever, vomiting, bowel disorder, drowsiness and irritability, followed by stiffness of the neck or back. Prompt medical care, early recognition, and reporting of cases make possible the use of valuable preventive and control measures.

CHILD'S POOR APPETITE MAY BE RESULT OF ILLNESS

One of the most familiar child behavior problems affecting physical health is that of poor appetite. It has been said that there is a nation-wide hunger strike among children because there are so many of them who will not eat the kinds of food and the amount of food that they need.

Often this problem of poor appetite develops during an illness when the child's appetite is naturally not as good as when he is well, and the parents use all sorts of methods to get the child to eat. Later, the child remembers this and continues the bad habit of refusing to eat in order to get attention, together with coaxing, petting and bribing, a writer in *Child Study* believes.

The fact that the child is sick does not necessarily mean that his routine should be altered or that he should be allowed to become disobedient and spoiled. Rather, it is important to see that the child's routine is carried out in the ordinary way, so far as the emergency permits. Not only will it be easier for the mother to care for him during illness, but he will readjust himself more quickly afterward.

A story about Cosmetics and* A SPECIAL GIFT OFFER *for Hygeia readers

Your Doctor will tell you that many women are sensitive to certain ingredients often found in cosmetics. As a result, they suffer from skin eruptions, running eyes and coughing. MARCELLE COSMETICS are free from these ingredients —they are **ABSOLUTELY PURE.***

Concerning MARCELLE Cosmetics, permit us to present **THREE facts:**

1—**MARCELLE** Cosmetics are endorsed by the Medical Women's National Association.

2—**MARCELLE** Cosmetics comply with the rigid standards of the American Medical Association.

3—**MARCELLE** Cosmetics are granted the seal of approval of Good Housekeeping Institute.

MAIL THE COUPON
FOR GIFT OFFER

Four preparations are used by most women in the care of their skin . . . the treatment varying, depending on whether **YOUR** skin is DRY or OILY. So, to readers of Hygeia, MARCELLE offers you your choice of FOUR FULL-SIZED packages . . . **$2.00 worth of merchandise for $1.00.**

For **DRY SKIN** your $1.00 brings you
MARCELLE Cold Cream
MARCELLE Skin and Tissue Cream
MARCELLE Skin Freshener
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For **OILY SKIN** . . .
MARCELLE Cleansing Cream
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THIS OFFER EXPIRES OCT. 15, 1934

Just pin a $1.00 bill to the Coupon below . . . check whether your skin is DRY or OILY—indicate the shade of powder you want, and the SPECIAL GIFT OFFER will be sent PREPAID at once.

*Orris root and rice starch in cosmetics bring on annoying allergic reactions—pimples, blotches, sneezing, running eyes, coughing, etc. Victims of hay fever, rose fever, etc., are warned to use non-allergic cosmetics. MARCELLE Cosmetics do *NOT* contain Rice Starch or Orris Root.

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Marcelle
COSMETICS
—NON-ALLERGIC—
Marcelle Laboratories—Chicago
Established 1874

Marcelle Laboratories
1745 North Western Avenue, Chicago

Enclosed is $1.00. Please send me prepaid the 4 Marcelle items for DRY... OILY... (check dry or oily) skin. The face powder should be..... shade.

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Address.....

Dealer's Name.....

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Give your skin proper care with Elmo cosmetics and its loveliness will repay you. But be sure to use Elmo preparations. They do not contain a single ingredient that could possibly harm the normal skin. In fact, they are as pure as it is humanly possible to make them. And there is an Elmo preparation for every beauty need:

RA-LO LOTION—Foundation cream—to be used as powder base.
MELTING CREAM—Quick cleansing cream—liquefies quickly.
CLEANSING CREAM—Deep pore cleanser—with vegetable oil base.
HERBAL TINCTURE—An astringent—to improve oily skin.
RA-LO FACE POWDER—Our finest powder—in five shades.
CUCUMBER CREAM—Soothing lotion—may be used as powder base.
TEXTURE CREAM—For softening the texture of the skin.
SKIN FRESHENER—A mild astringent—cooling and stimulating.

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NEW GUARANTEE
against bottle breakage from any cause

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PURCHASERS of six Hygeia Nursing Bottles and six Nipples now get a Guarantee against bottle breakage *from any cause whatsoever.* Details in new blue cartons. The Hygeia Bottle has no shoulder or neck to collect *dirt.* No brush or funnel needed to clean or fill it. The Hygeia Nipple does not collect food particles. Patented tab keeps fingers from sterilized inside surface. Patented reinforced base resists nipple collapse. Dirt causes intestinal disorders. Use Hygeia Bottles and Nipples. *Use Hygeia Strained Vegetables too.*

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Send for free catalog—

"Health Publications of the American Medical Association"

American Medical Association, 535 N. Dearborn St., Chicago

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

(Continued from page 836)

vertising of the future. The food industry is recognizing these principles laid down by the Committee and putting them into practice.

A mother can use accepted brands of biscuit mixes in preparing delicious dainties for the school child. A variation of the cinnamon roll can be made with 4 cupfuls of biscuit mix, measured and mixed with 1¼ cupfuls of milk. This is beaten and flattened out with a rolling pin, spread with melted butter, sprinkled with brown sugar, soft maple sugar or shaved, hard maple sugar, and then sprinkled with cinnamon, nutmeg and raisins. The dough is rolled and sliced off the end, the cut side being placed down in a greased glass baking dish. Cinnamon rolls bake in twenty-five minutes at 425 F. Raisins and brown sugar burn more readily than the biscuit dough alone.

Butterscotch buns are delicious made in a similar way by putting cut cinnamon rolls into a pan of melted butter, brown sugar and pecans. Plain biscuits may be arranged in the same way and when baked they are turned out of the pan immediately; the butterscotch mixture makes a thin, transparent glaze over the biscuits and nuts, and it hardens as it cools. Dates, currants, large seeded raisins or tender, moist seedless raisins are good in plain or sweet biscuits. They can be shaped into individual fruit rolls, and a variety of chopped nuts may be used as decoration. Chopped nuts, moistened in butter, may be sprinkled over the top before baking; they become crisp and will not burn if the oven heat is regulated. For variety, sprinkle the top of biscuits before baking with bran moistened in melted butter.

Plain biscuits can be molded into Parker House rolls. The dough should be kneaded lightly for about one-half minute to make it smooth, and it should be rolled out to about ¼ inch in thickness and cut with a large, floured, circular cutter. Brush the top with melted butter, crease with a knife and then fold it over, allowing the top edge of the fold to protrude slightly beyond the lower edge so that when it shrinks back during baking the rolls will still be a good shape. After baking, the rolls may be opened slightly so that a piece of butter may be inserted. The dough should not be stretched after it has been rolled out ready to cut.

Plain biscuit dough, as prepared from the biscuit mix, may be rolled into little balls, and three or four of these may be placed in greased muffin pans for cloverleaf buns.

Scones are fashioned from pieces of dough, cut into squares or circles, and folded over candied cherries and candied orange peel. Candied pineapple may be prepared at home by cooking sliced pineapple in a thick sirup until the sirup spins a thread. Drain the pineapple from the sirup, and allow it to dry overnight on a wire strainer. Cut the fruit into pieces, and arrange it on biscuit dough; fold half of the dough across the top, and sprinkle it with sugar and cinnamon.

The scraps of dough that remain after cutting biscuits may be pressed together into a ball, rolled to ¼ inch in thickness, cut in pieces 4 inches long and rolled between the hands to smooth them into little rolls. Brush with slightly beaten egg white and bake for about seven minutes at 450 F. They are excellent bread sticks to serve with salads.

Thinly rolled plain biscuit dough is excellent as a meat pie crust; it is more quickly made with a biscuit mix, and it contains less shortening than a pastry dough. For the top of a chicken pie, small round biscuits may be placed close together and the whole may be baked until the biscuits are well done and brown and the cooked chicken and gravy are heated to serve.

For patty shells, biscuit dough is rolled as thin as possible on a well floured board. The dough is then pressed into muffin pans or used to cover the outside of muffin pans or individual pie pans, and the edge is cut off and crimped like pie. The shells are pricked with a fork and baked. Creamed meat, fish or vegetable is delicious in these patty shells or they may be filled with canned fruit, the juice of which has been thickened with cornstarch and flavored with lemon juice and sugar.

This thickened mixture of canned fruit is suitable for a regular family sized shortcake or for individual shortcakes. In order that the shortcake may be nicely split after it is baked, shape rather flat biscuits, spread with butter, and press another biscuit on top of each. The two remain together while they are baked, but they split apart more easily after baking than if only one thick biscuit had been shaped. A small amount of sugar, from 2 to 4 tablespoonfuls, may be sprinkled into a biscuit mix, and no special manipulation is necessary. A richer shortcake results from the use of

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

cream instead of milk for moistening the biscuit mix. Sweetened whipped cream is delicious with crisp shortcake and sweetened fruit.

For orange biscuits, dip a cube of sugar into orange juice, moistening it thoroughly. Place one cube on top of each biscuit, and sprinkle the top with grated orange rind before baking. These sweet orange biscuits are unusually fine with tea.

Cheese biscuit is delicious to serve with crisp salad. Sprinkle ¾ cupful of grated sharp cheese into 2 cupfuls of measured biscuit mix before adding the liquid and shaping. The cheese biscuits may be cut in triangular shapes and sprinkled with a small amount of cheese and paprika before baking.

Dutch apple cake consists of biscuit dough covered with slices of tender apples, sprinkled with sugar and spice, and baked in a slow oven. The apples may be put into the dish first and covered with the dough for an "apple jack." It may be served with sugar and cream or with hot milk. An upside down cake is made by laying the sliced apples with slices of pineapple in an iron frying pan on top of a mixture of 4 tablespoonfuls of melted butter and 4 tablespoonfuls of brown sugar. Spread a drop biscuit dough over the fruit, and bake. Turn out of the skillet while still warm, and serve with sweetened whipped cream.

Apple roly-poly consists of a piece of biscuit dough spread with butter, chopped raw apples, cinnamon and sugar. This is rolled, sliced and baked as cinnamon rolls are.

The biscuit sandwich is made the same as individual shortcakes, with two plain, thin biscuits baked together and separated immediately. For the filling, put ½ pound of tender cooked liver through a food chopper and mix it with ½ cupful of grated raw carrot. Moisten the filling with milk, and add a little chopped pickle relish if desired.

Round steak may be ground, seasoned with salt and pepper, shaped into flat cakes and broiled until tender and served hot with crisp lettuce in biscuit sandwiches. Chopped, hard cooked eggs, mixed with crumbled crisp bacon and drained chopped spinach, make a delicious filling; mayonnaise may be used to bind the ingredients together and to season them.

Fruit dumplings are delicious. Drop a soft biscuit mixture, as prepared for drop biscuits, into a boiling mixture of fruit juices and bake in a hot oven until brown on top and done through the center. Grape juice mixed with raisins and thickened with cornstarch is delicious, but peach juice or other fruit may be used for the fruit dumplings.

Apple turnover certainly appeals to the imagination and appetite of the school child. Biscuit dough, rolled thin, is cut into squares. A peeled, cored, whole apple is placed in the center of each square. The center of the apple is filled with sugar and spice, and the four corners of the dough are brought up toward the center and pressed together. To make the edges stick, they may be moistened slightly with cold water before they are pressed together. Sliced apples may be substituted for the whole apples, or a mixture of diced meat, carrots, onions and potatoes with seasonings may be placed on the squares of dough in the same manner, and the whole baked at 400 F. until done. These vegetable and meat dumplings are called Irish pasties, and the dough may also be cut in large rounds, folded over the filling and pressed together at the side. They may be served with hot meat gravy, lettuce and a dessert.

Steamed dumplings are made from dropped biscuits or from cut and rolled biscuits, and a biscuit mix produces satisfactory results. Arrange pieces of meat and bones for them to rest on, or use a perforated pan so that they will not be submerged by the meat broth. Cover the pan closely as soon as they are arranged, and steam rapidly for about fifteen minutes, until light, fluffy and thoroughly done in the center. If the pan is uncovered before they are done, they will be soggy.

Score your biscuits, and note the fine products possible when a biscuit mix that has the acceptance of the Committee on Foods of the American Medical Association is used.

Score Card For Baking Powder Batters and Doughs

	Points
1. General appearance (shape, size, uniformity and color)	15
2. Lightness of product	10
3. Crust (crispness, depth and quality)	10
4. Crumb color	5
5. Crumb texture (flakiness and uniformity of grain)	20
6. Flavor (taste and odor)	40
Total	100

[NOTE. — In the October HYGEIA, Mrs. McCray will discuss baking powders. Lists of the accepted foods discussed each month will be sent on receipt of 6 cents in stamps.]

STOP

before buying iodized salt and look carefully for this seal. Otherwise you may get one without enough iodine to prevent simple goiter!

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

ACCORDING to the December 19, 1931, issue of the Journal of the American Medical Association, health department tests of iodized salts bought at random showed some to be so lacking in iodine that they were worthless as preventives of simple goiter among children.

This would indicate that many grocers are, in all innocence, selling iodized salts that afford no protection whatever to the children of their customers.

In an effort to safeguard both the consumer and dealer against fraudulent iodized salts, the Committee on Foods of the American Medical Association is now granting its Seal of Acceptance to brands known to contain sufficient iodine to prevent simple goiter and its accompanying physical and mental backwardness.

Each package of Morton's Iodized Salt bears this coveted Seal of Acceptance, which is evidence that you can depend on it to protect your youngsters from simple goiter. That there is dire need for such protection is indicated by figures released by the United States Public Health Service, which show simple goiter to afflict 2 out of every 3 children in many localities!

WHEN IT RAINS IT POURS

IODIZED OR PLAIN, 10c

HIGH SCHOOL STUDENTS NEED TO BE INTERESTED IN THEIR HEALTH

Broadly spread evidence shows conclusively that, at the present time, to the great majority of high school boys and girls no word or subject or course is more unpleasant and distasteful than hygiene, an article in *Scholastic Coach* says.

The reasons for this attitude of mind and emotion vary with individuals and situations, but of prime importance is the fact that boys and girls are not naturally interested in their own health, least of all those of high school age, although the schools have made strenuous efforts to arouse and exploit this interest.

The academic form of health instruction in physiology and hygiene through the past years is also responsible for a distaste of the subject and has resulted frequently more in vagueness of comprehension or misunderstanding, temporary memorizing of useless knowledge, general boredom and negative influence on behavior than in an improvement of health.

While the more recent campaign for teaching health habits has been more practical and effective in improving health conduct at least temporarily, still the word "health" has been seriously overused, a fact which further explains the unattractiveness of health and hygiene to high school students.

That health education is imperative, however, is pointed out by statistics that show that not more than from 10 to 20 per cent of the boys and girls entering high school have acquired and are practicing on the average of 75 per cent of the recognized health habits, all of which they should be carrying out.

Actual unfavorable health conditions among high school students reveal serious need of remedy. While mortality among this class is relatively low, the morbidity shown in some forms of indisposition and illness is much higher than it should be. One third of high school absences are due to colds and their sequels. One third of the absences are due to digestive disorders, resulting largely from lack of hygienic habits in the selection and use of food. Many of the remaining absences are caused by accidental injuries, most of which would be avoidable if the student was trained in accident prevention. Surveys show that at this age orthopedic defects improve slightly for boys but increase in girls. Malnutrition becomes slightly worse; defects in hearing, vision, and in the heart and lungs increase, and thyroid disturbances and skin disorders are more frequent.

GOODBYE *to* SUMMER SKIN!

●

Those good hot months—when half the world was out trying to get a suntan and the other half, trying to dodge it—those summer months are past!

If your skin is dry or rough...then start right in with a daily application of rich NIVEA SKIN OIL. Rub it gently into the skin and note rapid softening and refreshening of the skin.

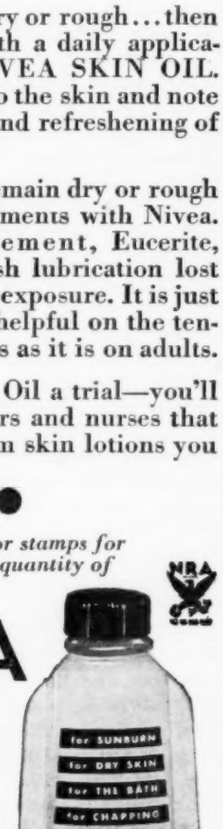
Dry skin can't remain dry or rough after a few treatments with Nivea. Its exclusive element, Eucerite, helps to replenish lubrication lost through summer exposure. It is just as soothing and helpful on the tender skin of babies as it is on adults.

Give Nivea Skin Oil a trial—you'll agree with doctors and nurses that it is different from skin lotions you know.

●

Send 10c in coin or stamps for a generous trial quantity of

NIVEA SKIN OIL



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KNOWLEDGE OF DUCTLESS GLANDS DESIRABLE FOR TEACHERS

Information relating to the functions of the ductless glands is in a flux. Much of it, moreover, is misinformation, particularly that in the exaggerated claims of advertisements of gland transplantations and in pseudoscientific literature. The practical importance of the dissemination among educators of correct information regarding these glands is evident, however, when it is realized that deviations in the secretions are accountable for many cases of variation from normal in nutrition, growth and development, affecting the ability of children to do prescribed school work.

Those glands that are composed essentially of epithelial cells are divided into two groups, one designated simply as glands and the other as ductless glands. Many of the glands, of which the sweat glands, salivary glands and mammary glands are well known examples, deliver their secretions through ducts. In contradistinction to these glands with ducts are the ductless or endocrine glands, or glands of internal secretion.

The discovery and recognition of the specific products or secretions of the ductless glands was long delayed because the collection of their secretions was not as simple or easy as in the case of the glands with ducts. The development of surgical procedures provided new measures and means of study, and transplantation of glands became possible. Biochemistry was then developed sufficiently to make the isolation of active principles possible; this in turn has opened the way to a fuller study of this phase of life processes.

Dependable information concerning the function of the ductless glands, their deviations and the easily recognized evidence of such deviation is necessary for the educator today and for the most constructive efforts in the promotion and conservation of health, an article in the *Washington Education Journal* says.

THE MILK MAN

The milk man comes so early,
It still is hardly light,
To leave the milk, all fresh and sweet,
In bottles clean and white.

I never hear the milk man,
But that I think how he
Has worked all day and in the night
To bring good milk to me.

—Azile Wofford in *The Grade Teacher.*

PUBLIC HEALTH RESEARCH CURTAILED BY LACK OF FUNDS

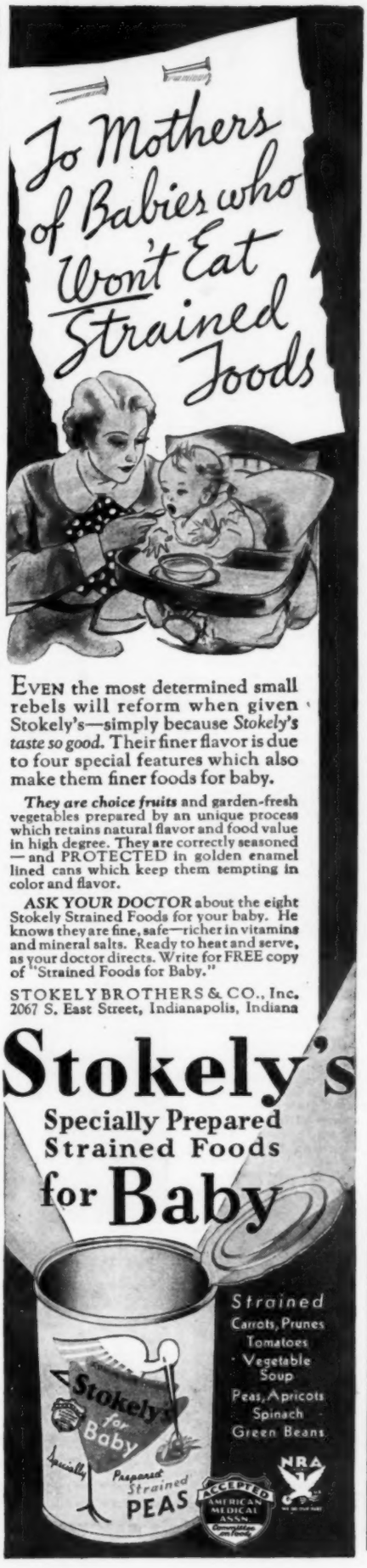
"Many public health laboratories throughout the country are being closed or their activities seriously and dangerously curtailed for lack of funds," Dr. Fred O. Tonney, director of research of the Chicago Health Department, maintained in a recent radio address.

"Taxpayers, burdened though they are, should not permit the discontinuance or crippling of the essential research work that has proved so effective in preventing sickness and death," declared Dr. Tonney. "Such research work has made possible the development of the great saver of child life, toxoid diphtheria preventive. As a result of the use of this preventive, Chicago lost only six children from diphtheria this year. Before its use, that many died in a day of this dread disease. Taxpayers should consider the infinitesimal cost of public health laboratory work and insist on its full maintenance in local and state budgets. In 1932, in the country's largest city, only 8.2 cents per capita were extended for public health laboratory and research service.

"Public health research is the basis of all progress in health protection. When research stops, progress stops. Research saves public money. It points the way to savings in health administration and to new and better ways of preventing sickness and death. The public health laboratory is no place for curtailing public budgets. The amount saved is not worth the trouble, and the consequences would be disastrous for ourselves and our families."

SCHOOL CHILDREN WILL ENJOY SAFETY TEST

Teachers of grade and secondary schools will find the Highway Safety Test of the Travelers Insurance Company of Hartford, Conn., an invaluable means of presenting traffic problems to their pupils. This comprehensive test, which is divided into three major parts of five minute time limits, should arouse considerable discussion and interest on the part of the students. The first test contains pictures of nine traffic hazards. The problem of the pupil is to match these pictures with a list of nine dangerous practices and indicate who was at fault. The second test is a true-false or yes-no type. Part three is a multiple choice test. There are fifty questions in all, and each question is given a score of 2 points.


To Mothers of Babies who Won't Eat Strained Foods
EVEN the most determined small rebels will reform when given Stokely's—simply because *Stokely's taste so good.* Their finer flavor is due to four special features which also make them finer foods for baby.
They are choice fruits and garden-fresh vegetables prepared by an unique process which retains natural flavor and food value in high degree. They are correctly seasoned — and PROTECTED in golden enamel lined cans which keep them tempting in color and flavor.
ASK YOUR DOCTOR about the eight Stokely Strained Foods for your baby. He knows they are fine, safe—richer in vitamins and mineral salts. Ready to heat and serve, as your doctor directs. Write for FREE copy of "Strained Foods for Baby."
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Strained
Carrots, Prunes
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Vegetable Soup
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Spinach
Green Beans
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Specially Prepared Strained PEAS
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NRA

PORTABLE OXYGEN TANK PERFECTED FOR HIGH ALTITUDE FLIERS

In order to supply oxygen to aviators for high altitude flying at any base at which it may be required, the U. S. Army Air Corps has recently delivered its first portable oxygen plant for the manufacture of liquid oxygen to Wright Field in Dayton, Ohio.

Oxygen is an essential element for life; and since the aviator cannot retain full consciousness on the diminished supply prevailing in the rarefied air of altitudes above 16,000 feet, he must breath extra oxygen from a tube attached to an oxygen container in the airplane. Aerial battles of the future will undoubtedly be fought at high altitudes, a dispatch from the War Department says; hence an oxygen plant which may be moved to various bases is essential defense equipment. In times of peace such a plant will be used only at outlying army airdromes where liquid oxygen cannot be obtained commercially.

The oxygen unit is mounted on a truck 32 feet long, 8 feet wide and 11 feet, 3 inches high. The weight of the chassis is 17,300 pounds, and the weight of the truck with the oxygen unit installed and with gasoline load is 44,300 pounds. The chassis has ten wheels weighing 300 pounds each and an all-wheel drive. There are twelve forward speed shifts and three reverse shifts.

The oxygen unit is the standard commercial type with special adaptations for the portable feature and the comparatively small space into which it had to be built. The capacity of the plant is 15 liters an hour, or sufficient to fill six of the standard, smaller vaporizers an hour.

The chances of any private patient with cancer of the rectum treated by perineal excision under the best conditions are roughly a 96 per cent chance of surviving operation and a 60 per cent chance of being well five years later. I think, in view of these figures even the most pessimistic must admit that cancer of the rectum is by no means an incurable disease. There are a large number of people living useful and active lives who have been cured of rectal cancer as the result of modern surgery. The proportion of cures would be much higher if all cases were submitted to operation in the early stages of the disease. The chief handicap to curing rectal cancer is not bad treatment, but late diagnosis.

—*American Journal of Cancer.*

CLINIC UNDERTAKES CURE OF WASHINGTON'S CROSS-EYED CHILDREN

Although it is only slightly over 6 months old, a clinic for cross-eyed children, conducted weekly at the Children's Hospital in Washington, D. C., has treated nearly 100 children; and the founder of the clinic feels that in the majority of cases the possibilities for complete cures are excellent. "Almost always it takes from two to three years to cure a cross-eyed condition definitely," he said, "so we have little to gage our success by just now."

Three stages are necessary in the curing of cross eye, physicians agree. These represent three definite campaigns or attacks on the disorder. First, the crossed eye must be restored to vision. Ordinarily the crossed eye is not used at all in seeing and eventually becomes blind. When the patient learns to use the eye, blindness is averted. Then the crossed eye must be straightened, either by glasses or by an operation. Finally, the two eyes must be taught to work together, focus together and function together.

The first two phases of the cure are easier than is the last stage. Operations, feared by many persons, seldom have poor results. It is the difficult process of the final phase of the cure that makes the time for a complete cure so long. Getting the eyes to function together is sometimes a discouraging task, but it has been accomplished many times.

One of the most unusual accomplishments of the clinic has been the placing of glasses on a baby 8 months old. First the frames, without lenses, were fitted on the child. When the young patient had become accustomed to the frames, the glass was put in and the process of correcting the vision was under way.

Approximately 2 children out of every 100 in Washington have cross eye, according to the estimates of physicians.

To many people the sorrows of children are but foolish tears; their deepest griefs, humiliations and disappointments seem but transitory affairs. Nothing could be further from the truth. Children's emotions are more compelling than our own; their sorrows are the most real there are. The child lives in the present; and his griefs, unlike those of men and women, are little mitigated by the memory of former joys or by the hope of others yet to come.—*The Training School Bulletin.*

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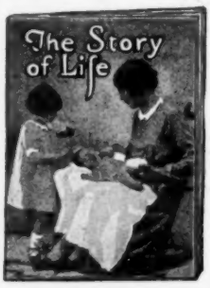

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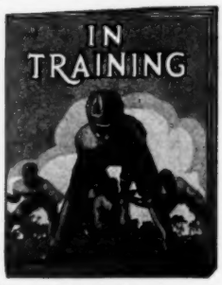

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ELECTRICAL DEVICES ARE THE NEWEST ALLIES OF MEDICINE

Paralyzed and crippled children, unable even to lift a hand or turn the leaves of a book, now by a simple nod to an "electric eye" can turn the pages for themselves at will. A side nod of the child's head will serve to switch on a radio and to tune it through successive stations; an opposite nod rings a bell for an attendant.

The work of aiding crippled children by means of electric eyes, photo cells and other electrical devices is being done in New York City; and at Warm Springs, Ga., use has been made of the photo cell "magic door" to provide a self opening portal as the patient's approaching body intercepts a beam of light. The door is closed by the action of a similar beam on the other side.

Literal "electric eyes" have also recently been provided totally blind persons so that they can easily and safely find their way about. At the American Foundation for the Blind, the blind are given a small "electric eye" unit which sounds a buzzer as long as the user is moving along a beam of light projected down the pathway as a guide. If the buzzer stops, the blind person knows that he is out of the beam. The same organization is also developing a "talking book" for its sightless charges; the book uses electronic amplifiers.

The same electrons that play in the photo cells and amplifiers may be made to render unique services to stricken humanity in other ways. The radio knife is bringing new speed, safety and sterlization to surgery; the electronic cardiograph enables the tiny heart pulses of electricity to be pictured as a means of diagnosing heart conditions, and the radio fever machine is winning new battles over germ diseases.

"It is sometimes felt that radio has driven many people out of their wits and put them in insane asylums," a representative of the New York Electrical Society said recently, "but now radio engineers are just reversing this process, and by means of radio, applied in the form of high-frequency fevers, are actually reclaiming former insanity cases and taking them out of the insane hospitals to become as normal human beings as the rest of us."

The layman can gain a fair idea of the manner in which tuberculosis affects the tissues by noting the mold seen in bread and cheese. —*California Department of Health Bulletin.*

EDUCATION FOR PARENTHOOD FOUND EASILY TODAY

The revolution in the attitude of parents t ward the work of being parents has resulted in their seeking expert guidance in the solution of their home problems.

An article, "Parents in Search of Education," in *Sc ool Life* presents a concise view of how these demands are being met by colleges and universities, state departments of education and state departments of health.

Sixty-four colleges and universities offer courses in parent education which include home economics, turned toward child care and homemaking, as well as training in handling groups such as study clubs and parent-teacher assemblies. Forty-five colleges and universities offered full or short courses or held conferences on parent education during the 1932 summer session.

New York and California are perhaps the most vigorous in their parent education programs. Oklahoma, Arkansas, Nebraska, Idaho and Delaware are other states which have inaugurated this work. The Smith-Hughes and George-Reed acts supply federal funds to match state expenditures on such programs, and in various states private funds have supplemented expenditures. Grants by one foundation in the last eight years totaled more than $7,000,000.

State health departments are concerned as much with practical parent education today as with vital statistics, quarantines and sanitation. State, county and city health agencies are helping parents to know how to care for children through health study classes, parent education courses, group conferences, mothers' correspondence courses, adult health clubs, home visits, demonstrations, individual conferences with parents, and clinics conducted by physicians or nurses.

In Alabama fifty-two county health departments carried programs which included parent education, and in rural sections of New York, family health conferences reached more than 5,000 parents. Virginia and West Virginia report correspondence courses for mothers, and the Florida state board of health enrolled 3,270 parents in 115 classes for a total of 501 lessons during the last two years. The subjects studied were health, habit formation, emotions and adolescence. Many states also issue monthly prenatal letters of instruction to mothers, diet charts for the child at various periods of growth, and leaflets on care of the baby, physical standards, good posture and dental care.

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HOUSING CAMPAIGN TAKES PUBLIC HEALTH ASPECT INTO CONSIDERATION

A firm belief that economic and public health conditions can be bettered through improvement of housing in Pittsburgh led the subcommittee on housing, of the advisory public health committee of the department of public health, to go on record with two progressive resolutions at a recent meeting, according to *Pittsburgh's Health.*

One resolution asked that the supply of vacant, dilapidated insanitary houses be removed from the rental market through notification to owners and through placarding to prevent occupancy until after satisfactory repairs have been made. If this program is extended to such dwellings as fast as they are vacated, hundreds of houses can be affected during 1934.

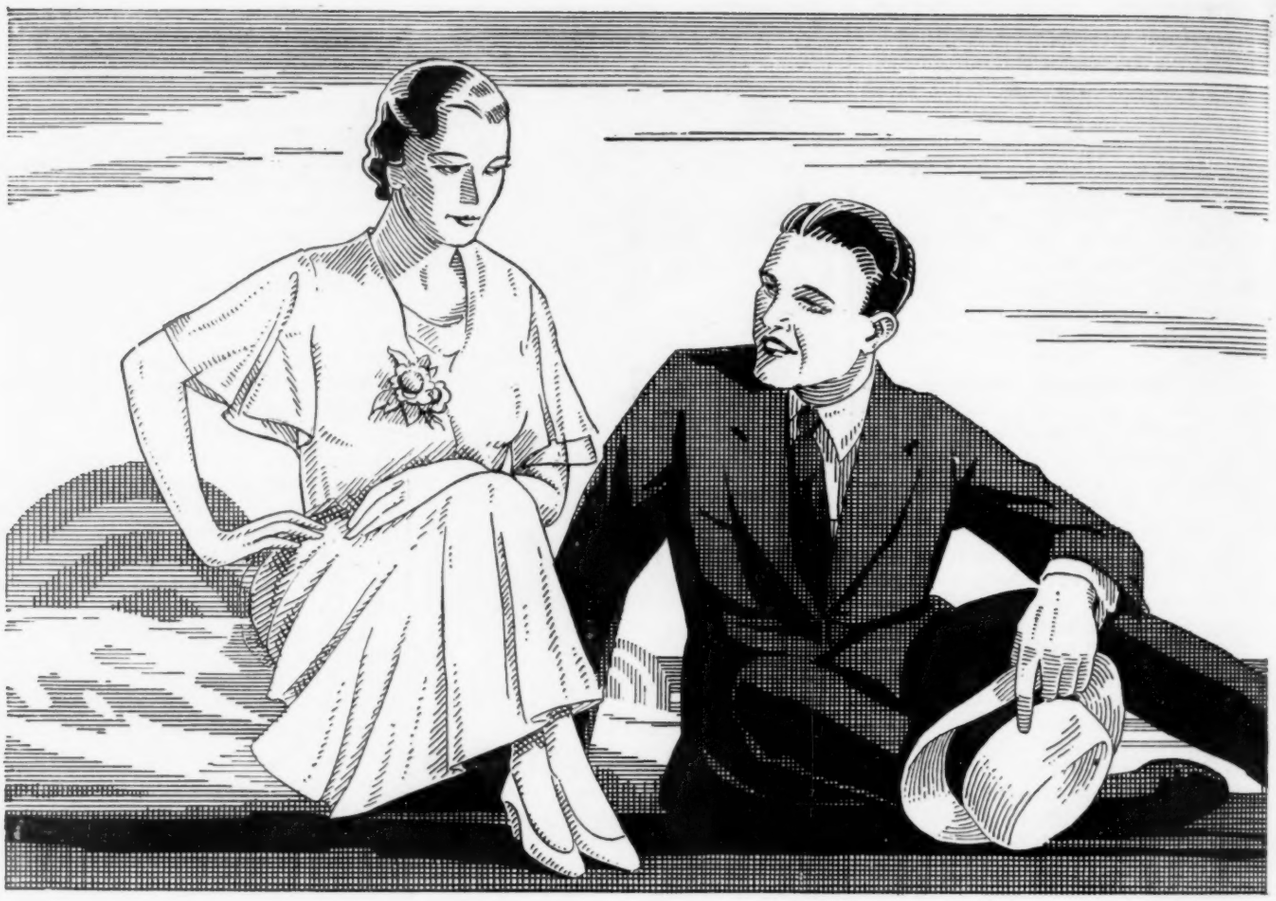
The second resolution approved state legislation designed to create: (a) a state board of housing with regulatory power over limited dividend housing and reconstruction companies; (b) limited dividend housing companies to build houses for families of low incomes; (c) limited dividend reconstruction companies to operate in blighted areas.

The subcommittee advocates having housing policies conform, as closely as possible, to the knowledge of medical science and social welfare. It is believed that a fundamental policy of this sort will be a primary guarantee of ease in attaining and maintaining housing conditions favorable to public health. It was pointed out also that the burden of taxation could be lowered materially by doing away with the direct and indirect expense incurred by the city because of dilapidated and insanitary housing.

TALKING

Talking is work, indeed for the tuberculous person it is often one of the very worst forms of work. It spends both physical and nervous energy, and irritates the throat as well. An argument or a vivacious conversation may be violent exercise. Uncontrolled, excessive cough, it has been said, is a very bad form of overexercise. Of all cough medicines, one of the best is to stop talking, and if the disease has invaded the larynx, the only cure is to stop talking. If patients were to administer to themselves all the silence that is prescribed for them, "ultimate results" would become pleasanter reading.

—The Hoosier Res-cuer.



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